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EDUCATION, COMPETITIVENESS, AND CHILDREN'S TELEVISION

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BEFORE THE

SUBCOMMITTEE ON COMMUNICATIONS

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

EDUCATION, COMPETITIVENESS, AND CHILDREN'S TELEVISION

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WEDNESDAY, APRIL 12, 1989

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
SUBCOMMITTEE ON COMMUNICATIONS,
Washington, DC.

The subcommittee met at 9:12 a.m. in room SR-253, Rayburn Senate Office Building, Hon. Daniel K. Inouye (chairman of the subcommittee) presiding.

Staff members assigned to this hearing: Toni Cook; Tom Cohen, staff counsels; and Gina Kenney, minority staff counsel.

OPENING STATEMENT BY SENATOR INOUYE

Senator INOUYE. The hearing will please come to order.

Over the decades this hearing room has played host to many important personages: Presidents of the United States, important members of the Cabinet, distinguished scholars, great captains of industry. This morning we host a person who has played an important role in the education of children, Big Bird.

This morning's hearing concerns itself with the children of the United States, and over the past year many studies have demonstrated that students in the United States are lagging very badly behind those of the rest of the world. Alarmingly, a large percentage of our children cannot read, add, or subtract, or understand the meaning of important events. And yet we expect them to find gainful employment and to lead our nation in the next century.

The purpose of this hearing is to consider how we can better use television to enhance our children's education and whether we should initiate a program to increase the amount of educational programming for children.

There are an estimated 42 million children in this country and they each spend anywhere from 11 to 28 hours a week watching TV. By the time most children reach the age of 18, it is estimated that they will have watched 1,500 hours of TV.

Other than sleep, watching television is what children do the most. Moreover, children from families with lower income watch more television and rely more heavily on it for information.

And finally, television has been shown to be an efficient and effective way to reach and educate children, both in the home and in school.

There is no dispute that the work place is becoming increasingly more complex and sophisticated. Research, however, indicates that

the work force is not prepared for modern jobs. Many workers are not even prepared for lower level jobs.

Our high schools graduate 700,000 functionally illiterate young people every year, and it is getting worse; and another 700,000-plus drop out before completing high school, and that too is getting worse.

According to the Bureau of Census, in 1982 between 17 and 21 million United States adults were illiterate. I personally think that is a conservative figure. Moreover, many adults and students who can read and write cannot apply these skills to the tasks required in today's work place. Many entry level positions today require workers to be able to solve practical problems they are not trained to address.

In addition to the high illiteracy rate in this country, the recent report to the nation on the future of mathematics education by the National Research Council concluded that the United States is experiencing a decline in mathematical skills and interest.

For example, in 1987 only 55 percent of the 700 tellers hired by Chemical Bank passed an eighth grade level mathematics test. These are the men and women who count our money as we deposit or withdraw it. In 1983 more than 70 percent passed the test.

In addition, from 1976 to 1986 high school student interest in mathematics declined by 50 percent. Only 8 percent of the current work force consists of scientists and engineers.

The result of the second international math study in 1982 indicates that the performance of the top five percent of U.S. math students was matched by the top 50 percent of students in Japan. In addition, the top 1 percent of U.S. students scored lowest of the top 1 percent of all participating countries. Thus, our best math students rank the lowest when compared to their counterparts in other countries.

Further, according to the National Research Council report, non-Asian minorities, that is blacks, Hispanics, and Native Americans, are significantly underrepresented in all scientific, engineering, and professional fields because of a lack of proper foundation in math.

The percentage of blacks and Hispanics receiving doctoral degrees in mathematical sciences has averaged 10 per year since 1974. This is particularly distressing because so many mathematics professionals are teachers and role models.

Blacks and Hispanics will soon be the majority in this country. Yet they will continue to be underrepresented in the faculty in our schools and universities. This data is particularly depressing when considered in conjunction with the fact that the percentage of black and Hispanics enrolled in college declined from 1976 to 1986 from 33½ percent to 28.6 percent for blacks, and 35.8 to 29.4 percent for Hispanics.

There is a great deal of evidence that TV can effectively teach children. Viewing Mr. Rogers' Neighborhood leads to increased prosocial behavior, task persistence, and imaginative play. While watching Sesame Street, pre-school children learn many of the skills and concepts taught on the program.

Research also demonstrates that the program Reading Rainbow encourages reading of the books featured in the program, and there

is a marked increase in the number of books sold and checked out of libraries after a book is featured on the program.

Today public television is the primary source of educational children's programming in the United States. Over $40 million is spent each year to produce and make available over 1,200 hours of children's educational programming, available for broadcast on public TV. This amount, however, pales in comparison to that in other countries.

Japan and Britain, for example, have clearly recognized the important role TV plays in education. Japan relies very heavily on in-school use of TV to educate children. In Japan 93 percent of the public schools have access to 122 educational programs per week and use an average of 33½ hours of instructional programming per week. Because there is so much instructional programming in the schools in Japan, programming for home viewing tends to be geared more towards informational and pro-social behavior.

The British take a different approach to children's programming. All stations, commercial stations and non-commercial, are required to carry educational and informative programming aimed at children. In 1985, stations were required to carry 3½ hours of children's informative programming and 2½ hours of children's instructional programming and provide almost seven hours of school programming.

These amounts mirror the children's programming carried on the BBC, the British equivalent of our Public Broadcasting System. In addition, the British produce far more new programs each year than we do.

While the United States lags behind other countries in producing educational programming, we have had many successes—Sesame Street, the Reading Rainbow for example. But it is very difficult to increase the number of programs because they are so expensive.

Educational programs, in addition to the normal production costs, require a great deal of research and the involvement of educators at all stages of production. Moreover, for commercial broadcasters there is little incentive to broadcast programs like Reading Rainbow, because they are designed for a narrow audience and therefore the revenue from the programs tend to be far less.

Thus, public TV is the primary outlet for such programming. Public television, however, also has limitations on airing children's programs. It has the responsibility to provide programming aimed at adults whose interests are not served by commercial TV. For public television, there are only so many hours when programs can be aired, and resources are limited.

So this hearing addresses the educational problems we face today and one way of addressing these problems. The single biggest impediment apparently has been the lack of funds.

While there are sources of Federal funds for educational programming other than the Corporation for Public Broadcasting, those funds are scattered among many different government entities and they are too limited. There is at present no one source of funding devoted solely to educational programming, and this hearing will address whether the time is now ripe for such a dedicated fund.

And I look forward to hearing from each of the witnesses.

And before we proceed, may I call upon my colleague, Senator Pressler.

OPENING STATEMENT BY SENATOR PRESSLER

Senator PRESSLER. Thank you, Mr. Chairman. I think your opening statement was absolutely essential. I commend you on the leadership in this area. I think you have said it very well.

I live in two places in this world. One of them is in Washington, D.C., where my wife and I own a house in the city, and this city has an inner city problem that you spoke of, where many people graduate from grade school and high school with no mathematical skills. And I really do not see any hope of that improving except through a program of things on TV that will affect them or inspire them or educate them.

I also live on a farm in South Dakota, and we have just begun to receive microwave TV, not cable TV, so that there can be more channels even to farms and ranches. And that is a new development, to bring in low-cost TV to people living in rural and small town areas, and they also need this program.

They also need something to help children who miss out in some other way, whether it is Indian reservations or very rural areas. They need it as much as they do in Washington, D.C.

So the two places I live, one very rural and one very urban, both need what you have just described, Mr. Chairman.

But again, I join you in this effort and I am supportive, and I look forward to hearing our witnesses.

Mr. Chairman, thank you for scheduling today's hearing on educational television for children. It's an old cliche that our children are our future, but it happens to be true. A good education, or the lack of one, determines how productive each member of our society will be. And the health of our society as a whole depends upon the quality of education our children receive.

American education is demonstrably deficient in certain areas. Our students rank at or near the bottom among industrialized nations in math and science. Consequently, our colleges produce many fewer engineers and scientists than our society needs.

You can visit nearly any college in this country and visit its math and science departments, and you'll wonder where the American students and faculty are. It's nice that so many foreigners want to study at our institutions of higher learning. But it's sad that without those foreign students, a large share of those institutions would have to close their science and math departments.

American students are even more ignorant when it comes to geography. I honestly believe that most high school students think South Dakota is located next to Georgia, if they even know it's a state.

But college and high school are not the places to teach basic skills and a passion for learning. That needs to be done earlier, at the grade school level. And considering the degree to which television has invaded the lives of everyone, not the least the lives of our children, it is appropriate that we consider the role of television in education. In fact, we cannot ignore it.

Mr. Chairman, I look forward to hearing what today's witnesses have to say about the proper role of television in children's education. Thank you.

Senator INOUYE. Thank you very much.

I would like to advise the committee that a bill will be introduced either today or tomorrow to carry out some of the goals that we seek, and I would hope that all of us could co-sponsor this.

Senator PRESSLER. I would like to ask to be an original co-sponsor, Mr. Chairman.

Senator INOUYE. Thank you.

Senator Gorton.

Senator GORTON. Mr. Chairman, I agree with Senator Pressler that your opening statement thoughtfully and accurately covered this field. I have nothing to add to it except to thank you for it.

Senator INOUYE. Senator McCain.

Senator MCCAIN. Mr. Chairman, I like my colleagues over here cannot improve on your eloquence, so I hope we could continue with the hearing.

Thank you, Mr. Chairman.

Senator INOUYE. You are very kind, sir.

I would like to now call upon the first panel. It consists of: Dr. Joseph Duffey, Office of the Chancellor, University of Massachusetts; Dr. P. David Pearson, Director of the Center for the Study of Reading, University of Illinois in Urbana; and Ms. Shirley A. Hill, Chairman of the Mathematical Sciences Education Board of Kansas.

Ms. Hill and gentlemen, welcome. May I call upon Dr. Duffey.

STATEMENT OF DR. JOSEPH DUFFEY, OFFICE OF THE CHANCELLOR, UNIVERSITY OF MASSACHUSETTS

Dr. DUFFEY. Let me begin by expressing the admiration and gratitude of educators and of those who are concerned with the future of our nation for the leadership that this committee has shown in calling these hearings into the impact and role of television in shaping the intelligence and character of our children.

I want to assure you that there are millions of parents and thousands of teachers who share your concern and who will support your efforts to respond to fundamental needs in this area.

The education of the young, the formation of the next generation, is one of the most fundamental obligations of life. If we look at nature, in the animal world we see that there is a sense of a fundamental impulse to care for and instruct the young.

But in the human animal, this is far more than a biological obligation, because the survival of our culture and our way of life is at stake, as well as the future wellbeing of our individual children.

Each of us, if we are fortunate enough to have children of our own, wants to prepare our child for full participation in life's opportunities. We seek for them health, self-confidence, awareness, sensitivity, and we are prepared to sacrifice to make that possible.

But the mark of a higher civilization is the sense that the children of a particular generation are not just individually yours and mine, but that they are ours, that the society shares in an obligation for their wellbeing. I think the world can now be divided be-

tween those nations in which this strong feeling of common obligation to the next generation inspires the investment and the outlook toward the future and those that neglect this task.

It can no longer be said that America is a nation that is child-centered. Indeed, it may well be said that, looking at our expenditures and style of life, that children are no longer a major priority.

And yet, one reason why we must examine the question of what we owe the next generation is more than one of natural inclination or compassion. Today it has to do with the very strength of this economy and the future of our culture. I refer to what we are calling in almost a buzzword now the issues of competitiveness, the viability of the American economy.

This should not be viewed, in my judgment, simply as a race for dominance or superiority or regaining American hegemony in terms of trade or industrial might, for the world has already changed. We have entered a new global economy in which the ability to understand, the ability to cooperate are as important as any capacity to compete.

It is the question—the issue is participation, and the new global economy requires a high level of awareness and understanding and participation from all of our citizens. I think, Mr. Chairman, that your opening statement clearly cites our deficits in this area and the importance of this.

There is no way to assess, however, the needs in this area without acknowledging the problem of disadvantaged children in America today. Nearly a quarter of the children in our nation live in poverty. Their personal circumstances often make development and learning extraordinarily difficult.

These children represent a growing portion of the work force for the next generation. They must be well educated and well equipped for the types of jobs the economy will produce.

I think often of that motto used by the Association of Black Colleges, "A mind is a terrible thing to waste." In our economy, a mind is also an extremely costly thing to waste.

I come from a region of the country where the economy may well be stymied by the lack of trained participants, trained personnel, and yet at a time when thousands of young people every year drop out of school and lives are simply not prepared to participate fully in this economy.

We have become concerned with the increasing deficits we face in terms of literacy with respect to many nations of the world, including some of those in the so-called Third World. Addressing those questions will require the concern and the commitment and action of every sector of the society, but it is clear to me that the Federal Government can have the most immediate and dramatic impact on the problems of the educational system in terms of the needs of disadvantaged children.

It is for this reason that, despite the fiscal stringency of the current time and the need to balance the budget, I testified on behalf of the National Council on Competitiveness in January to the Senate Budget Committee, asking that serious consideration be given to funding for childhood nutrition, for Headstart, for Title I of the Educational Consolidation Improvement Act, because we be-

lieve these issues are an important part of investment and preparation for the future.

It is also clear, though, that we must think about the implications of public policy in a number of other areas, and one of these of course is the impact, potential impact, of telecommunications. I assume, Mr. Chairman, there are two issues at stake.

One is what we can do to affect the market, the offerings in television, public and commercial television; and second, how this technology can be applied to and used and serve the goals of education. Let me take these in order very briefly and ask that a fuller statement be entered into the record as I bring these comments to a close.

The subject of television in our culture is one that evokes strong feelings and much controversy. But television is the central medium of communication. It is more than that, however. It is a major source of entertainment and of diversion.

It is the primary medium by which most Americans receive information and arrive at impressions of reality. Television dominates the hierarchy of celebrity, and it is the chief source of role models for our children. It sets the stage for our understanding of what we sometimes call lifestyles.

Television is clearly more than just another medium of communication, another way of receiving information. It has become the babysitter for the young. In many homes in America, television often is the background accompanying the daily round of chores and activities, always present, only rarely engaging our deep, sustained attention, but always presenting us in an authoritative way with views and news and entertainment and diversion and a myriad of impressions.

The impact of extensive exposure to television, the reliance upon television as a chief source of information, now has divided and defined a clear separation of generations.

My own opinion is that the capacity for critical thinking, for reflection or sustained attention span are all affected in a negative way by extensive exposure to television, especially at an early age. But I recognize those may be the views of simply a rather crotchety middle aged American who grew up before the electronic village became a reality.

The debates over the impact of television will continue, but we have extensive experience today from men and women who have been careful students of the subject. And I believe this committee has wisely chosen today to seek the counsel of scholars and researchers in this subject who have observed and attempted to understand the impact of the role television plays in shaping the intelligence and the consciousness of the young, and I join with you, as I am sure millions of others do, in listening to the observations of those who will testify along these lines.

The second question has to do with television and formal education. While many people point out that television may be to blame for some of the educational shortcomings we face—as you indicated, Mr. Chairman, the average American high school student by the time he or she graduates has watched 20,000 hours of television, while in twelve years of schooling they may have spent fewer

than 13,000 hours in the classroom—still television in my judgment must not, need not compete with academic learning.

Television, like computers, can and should be used to enhance learning. To appreciate the capacity of television, we have only to look at the tremendous growth of its use in business. In 1986 alone, and relying here on research done by Shelly Weinstein of EDSAT, in 1986 alone business expended $3 billion on telecommunications, principally for management, sales and training, very effectively.

It is projected that by 1992 business will expend about $12 billion a year. This dramatic growth includes increasing use of interactive television for teleconferencing.

In 1986, the demand for global networks by multinational institutions grew from 292 circuit equivalents at the beginning of the year to 1,522 circuit equivalents by the end of the year—clear evidence that this medium is effective and efficient.

It is extremely effective in terms of educational use, cost effective. The investments pay off very quickly. Like computer-assisted instruction, television in the classroom does not limit the role of either the teacher or the student, and in fact it can liberate both.

Teleconferencing can be a valuable means for teachers to participate in continuing education.

The fact is, however, that of the 3,400 colleges and universities, of the 16,000 school districts and 6,000 libraries, at best fewer than 6 percent of these institutions, educational institutions, are using telecommunications technologies.

We are presently spending $330 billion a year on education. How much would it cost to encourage investment in these new learning technologies and use them effectively? This would be, in my judgment, a very important investment.

In short, Mr. Chairman, I hope that we will be able together, public and private sources, to address the two questions: What do we do about the paucity still of creative and wholesome and constructive programming available across the board for children, and how do we take more seriously our responsibility for the impact television has in shaping their consciousness, intelligence, and character; and second, how do we take this new technology and use it in the best possible way to enhance the task and obligation, solemn obligation, we have of educating the young and preparing for the future?

Thank you.

Senator INOUYE. Thank you very much, Dr. Duffey.

I call on Dr. Pearson.

STATEMENT OF DR. P. DAVID PEARSON, DIRECTOR, CENTER FOR THE STUDY OF READING, UNIVERSITY OF ILLINOIS (URBANA)

Dr. PEARSON. Good morning, Senator Inouye and colleagues and other distinguished guests.

As Director of the world's largest organization devoted exclusively to research and development in the area of school-related literacy, the Center for the Study of Reading, it is my honor and pleasure to share with you today some perspectives about literacy and technology generally and in particular broadcast technology.

I want to start by presenting some facts related to issues of literacy in American schools and American society generally, and then move to the role of video technology, both by itself and in concert with other technologies, might play in improving literacies in our schools and in our society.

When I present these facts, I will be reinforcing much that you, Mr. Chairman, have already presented in your opening statement.

My first point is that literacy demands in our society will be higher than ever in the foreseeable future. If you talk with business leaders, if you read what they say about what schools are doing and not doing in preparing people for the business world, they are of course concerned about the fact that many workers come to their factories and to their businesses ill-prepared in matters of basic literacy. They do not compute well, they do not write well, they do not read well enough to solve the problems.

But if you look beyond that, you will find that they are even more concerned about the fact that those that we send them to participate in decisionmaking and executive roles are not well equipped to be good problem-solvers and reflective thinkers.

Apparently, by the way, America's corporations feel that they are better able to remediate the more basic problems of the mechanical aspects of reading and writing than they are able to remediate the thinking skills deficits that they find.

One of the great ironies of technology, particularly as we as a society become more firmly rooted in our post-industrial economy, is that it tends to increase, rather than decrease, demands for literacy in the work place. Technology tends to eliminate those jobs requiring the lowest levels of literacy at the same time that it creates jobs requiring higher literacies.

For example, robots can perform assembly line tasks that require little or no literacy, but robotic operations require more supervisors and especially more repairmen, and both of those positions require relatively high levels of literacy. On a personal note, I can attest to the fact that computers, by the way, do increase the need for literacy and I do not think that they will ever replace books. Every time I get a new piece of hardware or software for my computer, I get about an 800-page book telling me how to use it.

Couple of these projections about the work place with the enormous social, political, and economic problems our society faces, and I think the inevitable conclusion is that it is the thoughtful literacies, thinking and problem-solving, and not the functional literacies, decoding the messages and getting the grammar and the spelling right, that will dominate the thinking and the concerns of both the educational and corporate worlds in the near future.

Fact number two: illiteracy, both in our society and in our schools, is a problem of increasingly greater proportions. Adult literacy problems are in the public eye these days for obvious reasons, and no matter how one defines illiteracy two facts stand out:

First of all, in both the public and the private sector we pay a tremendous cost for illiteracy, in direct service for the costs of illiterate and employable adults and in low productivity, accidents on the job, employee errors, and the extra training required to bring people up to their required levels of literacy.

Second, it is the unequal distribution of literacy that continues to plague our efforts at reform. Its tendency to be associated with poverty and crime, and its capacity to sustain itself across generations, it is those facts of that unequal distribution that I think tax our patience and wisdom.

School-related illiteracy, by the way, is not bad. It is getting better, but it is still not anywhere good enough. If you look at the national assessment of educational progress over the past 15 years, there are several interesting trends, some encouraging, some discouraging.

First, across several reading assessments during this period our younger students, our 9-year-olds, have either held their own or actually made progress in comparison to 9-year-olds in earlier years. Their progress has been most dramatic, however, with the lower level reading skills and least impressive with the higher level skills, those requiring inference and problem-solving.

For 13- to 17-year-olds, the trends over time show either no change or slight decreases, and again, as with the 9-year-olds, the problems are more severe with the higher level reading than the lower level reading skills.

And the problems in writing appear to be more severe than those in reading. In the latest of these assessments, it was estimated that 40 percent of the 17-year-olds cannot draw inferences from written text and 50 percent of 17-year-olds could not write a persuasive essay of more than a few sentences.

Well, the problem is more than just illiteracy. There is a problem, I think, in our society of aliteracy, and here is where I think is a touchpoint with technology. Those who can read do not seem to read very much. For example, a few years ago a random sample of American adults were asked: How many books did you read last year? And the most common answer given to that question was zero.

On a recent poll in 1987, one percent of the U.S. population reported actually having finished a book in that year, and only 25 percent reported having even read in a book; 58 percent of adults report not having ever finished a book since finishing high school.

Next fact: It is getting increasingly difficult, I think, to demonstrate either the short-term or the long-term benefits of literacy to a growing population of children in poverty, children for whom the good life by virtue of the models they see is defined in vastly different terms from our traditional values and expectations.

Additionally, the family as a social institution seems unable to convey many of the values that we have traditionally expected them to convey in paving the way for schools.

The dilemma of American education is that the demands for literacy are expanding at the very same time that our ability to deliver these literacy skills seems to be shrinking. And in this vein, I think we need to investigate every available avenue and resource as we attempt to provide children with the literacy skills they will need for personal and material satisfaction and that our society will need for economic, political, and intellectual survival.

Our investigation will surely include a careful study of educational technology, including video technology and I would say video-computer interfaces. I have been very impressed in recent

years, and I will send—I have asked a colleague to send reports to your staff dealing with the issue of videodisc technology and the enormous role that that can play in schools.

John Bransford and his colleagues at Vanderbilt University have created some of the most exciting computer-videodisc interfaces, where they get children to solve 47-step mathematics problems, and they will sit there for 2 or 3 hours and work on these problems that are presented to them via video. Just take the same kids and give them 47 problems on a work sheet; I assure you they would never do it.

My colleague Rand Spiro at the University of Illinois is working on similar interface technologies between video and computers to get older students to do analyses of literature, even taking the movie Citizen Kane and analyzing it from its various themes and the like.

I think also there is an important role for both broadcast and video-computer interface technology in improving teacher skills at teaching literacy and reading and writing. One of the difficult things to help teachers become more expert at what they are doing is to get them to reflect upon their growing and emerging teaching skills.

And initial experiments with using video as a way of presenting expert teaching models, as well as a way of getting teachers to look at their own in comparison to those experts and to change their approaches, have been very encouraging.

And finally and I think most importantly, I think that there is a role in providing direct broadcast services for school-aged children. There is little question, either from the data or from our own personal experiences, as evidenced by Big Bird's appearance here this morning, about the inestimable value of programs like Sesame Street, The Electric Company, and Reading Rainbow, and Square One, I might add, in mathematics.

Each in its own way has enriched the literacy experience of America's children. One wonders where our level of literacy and our levels of literacy, as bad as they are, would have been without those programs.

I think what is needed now is a new sequel to Sesame Street. We had The Electric Company and for its day and its time it served us well. I think what we need now is a new kind of sequel to Sesame Street for those children in that age 6 to 9 that addresses the issue of higher literacies and problem-solving while you are reading and writing, thinking about reading and writing.

The goal of such a program should be to help children learn three important lessons about reading and writing: A, that literacy is fun and exciting; B, that literacy is functional, it helps you accomplish goals in the real world as well as in the school world; and third, that good readers and writers are strategic problem-solvers, they evaluate what they do, they solve their own problems, and they get on with the business.

If we do that, we will be reinforcing the good work that our schools have recently begun.

In conclusion, let me say that all too often television is viewed as the culprit in explaining the literacy ills of American society. As

others today will point out, the data do not support any such conclusions or accusations.

Video technology can be, I think, put to good use to enhance literacy. I strongly support your efforts to see that the educational and the broadcast communities get the opportunity to demonstrate how video can support, rather than supplant, literacy.

Senator INOUYE. Thank you very much, Dr. Pearson.

Ms. Hill.

STATEMENT OF SHIRLEY A. HILL, CHAIRMAN, MATHEMATICAL SCIENCES EDUCATION BOARD, NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMY OF SCIENCES AND NATIONAL ACADEMY OF ENGINEERING

Ms. HILL. Thank you, Mr. Chairman.

I in my real life am a professor of mathematics and education at the University of Missouri, Kansas City. But currently I chair the Mathematical Sciences Education Board, and it was that board, an arm of the National Research Council—it produced the report that you, Mr. Chairman, referred to in your opening statement, the report to the nation on the future of mathematics education.

There are a lot of shocking data in that report. But in addition, that report contains a plan and a strategy for actually trying to do something about the state of mathematics education in this country. I would like to talk about that and eventually make what I think is a link to the concerns of this hearing, educational television.

The Mathematical Sciences Education Board was established in 1985 by the National Research Council. It is considered to be a leadership mechanism concerned with the full gamut of issues in teaching and learning of mathematics pre-kindergarten through college.

But it is unique because it is not a group of ivory tower intellectuals. It brings together representatives from many sectors—classroom teachers, mathematics supervisors, school board members, superintendents, parent-teacher association members, chief state school officers, university professors of both mathematics and mathematics education, legislative leaders, and business leaders—with the sole concern to focus on the improvement of mathematics education.

The board is concerned not only with studies, but under its unusual mandate it is directly involved in implementing many of its recommendations. It is an active board.

It released the report "Everybody Counts—A Report to the Nation," just in the past January. It makes the case for the critical role of mathematics in the modern world and for the importance and opportunity for the nation to reform mathematics education.

I think it is fitting that this committee might look on mathematics as one educational prototype in considering its legislation on educational television because mathematics is, apart from English, the most widely studied subject in schools and colleges today in the United States, involving approximately 1,500,000 elementary school teachers, 200,000 high school teachers, and 40,000 college and university teachers.

This emphasis on the role of mathematics derives from two foundational roles mathematics plays in the nation's educational matrix. First, mathematics and English have long been the two main pillars of general education in the United States. But today the mathematics component has increased greatly in importance.

The information age is a mathematical age, and in this age mathematics is a key to opportunity. Numeracy, the mathematical equivalent of literacy, is a must for all persons desiring to be productive citizens in an increasingly technological society.

We have to equip our citizens, not merely with the skills needed to deal with nineteenth century shopkeeper arithmetic, but with spread sheets, computer graphics, and statistical quality control.

Communication has created a world economy in which working smarter is more important than merely working harder. And today Americans need to think for a living, and more than ever they need to think mathematically.

Second, of course, mathematics is the foundation of science and technology. No longer just the language of science, it now contributes in direct and fundamental ways to business, to finance, to health, and to defense. Mathematics is fundamentally the science of patterns and relationships, and the systematic study of patterns, whether in quantity, shape, arrangement, or form, yields a rich language for modeling phenomena in physical, chemical, and biological sciences, as well as in other disciplines. The future technological capability of the nation is tied directly to continued development of this foundation.

Putting these two observations together, I think one is led to the inescapable conclusion that mathematics must be considered a foundation discipline in the information age.

Let me come directly to the report, "Everybody Counts." It identifies a three-tiered challenge: first, to make mathematics education effective for all Americans, not just an elite few; to significantly improve students' mathematical achievements in this country; and to put in place new curricula appropriate to the new needs of the twenty first century.

The report lays out a national strategy for making our mathematics education the best in the world, and as a first step the board believes that we must achieve a national consensus among educators, parents, business leaders, and policymakers on new goals and directions for school mathematics.

Recently a first major step toward realizing a consensus was a publication by the National Council of Teachers of Mathematics, "Curriculum and Evaluation Standards for School Mathematics." These standards will be the linchpin of our strategy to revitalize mathematics education, and I would urge everyone who can take the time to read those standards, as well as the strategy set forth in the report "Everybody Counts."

Today this nation has a unique opportunity to build consensus around these goals and directions and encourage voluntary compliance by local districts. Plans for renewing mathematics must incorporate not only goals, but mechanisms for effecting change in an extremely decentralized United States education system.

The standards should be viewed as a benchmark against which local initiatives can develop alternative mechanisms for implemen-

tation. They represent a common philosophy, a universal set of interrelated concepts and methods, but they are flexible enough to allow for local and regional variation.

These standards and the plan for implementing them grew out of a national discipline-based leadership effort. But this must be paired with local effort of parents and educators whose responsibility it is to select and modify regional and local mathematics education curricula.

So these national standards augment and do not supplant grassroots efforts to strengthen mathematics education. They are complementary, not competitive.

What the report "Everybody Counts" attempts to describe is the critical role of mathematics in the technological information age. What the standards do is present a first step toward addressing that need. The intent is to work together with concerned educators, with concerned people in other areas of society, to try to put together a plan that will see these standards put into practice. We see our role as providing focus for the national effort.

You have received report after report on the need to revitalize the nation's education effort. Now we have a unique opportunity through what I have described as standards and a strategy for implementation. An historic opportunity has been put into our hands.

We have made a lot of progress. We need to be assured that that progress is sustained.

Let me make a comment about educational television. In my point of view, one will never fully learn mathematics through television. That medium is not sufficient, but can be extremely helpful.

Just recently the television program Square One, based on mathematics, has been shown to be a means of stimulating interest and excitement among students in this country. When it first came out, I made the statement that I thought that the role that this program could play to interest students in mathematics would be magnified tremendously if there were clear linkages among all aspects of education, the schools, and what youngsters were watching at home on their television sets.

Since that time I have seen instances where that has happened in schools. I have also seen instances in which there are almost no relationships drawn between the school program and what youngsters are seeing at home watching Square One.

It seems to me that a major strategy should be to bring together all the elements of education in a linked plan to forward these goals. The Mathematical Sciences Education Board is not only a group of mathematicians, as I pointed out. It also has other concerned people on it—for example, the President of the National PTA.

There is a program we have worked on together that is sending out information to PTA's for parents in the home to work with their youngsters in mathematics education and to join as partners with the schools.

An important factor that could be put into that whole plan would be the role of television as it links up with these other efforts. I do think that all of it would be magnified tremendously by linkages, interrelationships, formal coalitions, and I urge everyone who is interested in the effort to improve mathematics education to

first of all become familiar with the standards for excellence, and also to link up with organizations such as MSEB to try to improve mathematics education.

Thank you, Mr. Chairman.

[The following information was subsequently received for the record:]

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April 23,1989

Ms. Gina Keeney
Minority Counsel
Committee on Commerce, Science and Transportation
U.S. Senate

Dear Ms. Keeney:

This is reply to your letter enclosing several questions from Senator Pressler concerning the issue of economic competitiveness and children's television.

Let me first say that I profess no specific expertise in the area of television or education related to that medium. My expertise is in mathematics education and my testimony was based on that aspect of the broader issue of the economic competitiveness of the United States. So I must issue a disclaimer regarding the specifics of some of my answers. Nonetheless, I will try to provide guidance to the sources of other information.

1. I do not think we have good evidence on the effect of television on mathematics skills. We have had few instances of attempts to present a broad based program dedicated to teaching mathematics. Generally, what can be learned through the medium is factual information. Where interest is held and information is presented, television appears to be effective. But I should hasten to add that mathematics goes well beyond this. Mathematics, like science, is best learned as hands-on, laboratory based. It is active and television is a passive medium. It is not interactive. Skills must be actively practiced and applied. Television can motivate and build interest. It can also present a better picture of what mathematics is like and how it is used.

2. The best recent data on how American students compare with others in mathematics achievement is from the Second International Study on Mathematics Achievement. A good summary of these data is in THE UNDERACHIEVING CURRICULUM published by Stipes Publishing Co. of Champaign, IL. In those studies the U.S. had a lower performance in most areas than the other industrialized countries which participated. The Soviet Union did not take part but one of the Eastern Bloc countries, Hungary, did and its results were, in general, superior to ours. Japan had, in most areas, the highest scores.

3. I have no knowledge about the viewing habits of children in other countries.

5. The best data on these comparisons can probably be gained from the National Assessment of Educational Progress. In general, the suburban populations had higher scores but in recent years there have been larger GAINS in the urban samples . Thus they are closing the gap somewhat but are still behind.
   I certainly would not agree that television will solve these problems but it can help somewhat. First, it reaches these children who need skills. Children won't learn skills directly from television but it can help to interest them in learning and motivate them to want to learn.

I hope that these answers will be of some help. I wish you well in your efforts on behalf of a most critical issue.

Sincerely

Shirley A. Hill

Shirley A. Hill

Chairman, Mathematical Sciences Education Board

Senator INOUYE. Thank you very much, Ms. Hill.

Earlier this morning I read a prepared statement which was prepared by the professional staff of this committee, and that is the usual procedure. The chairperson opens the hearing with a prepared statement.

I would like to now share with you my thoughts and my observations. I have spent 30 years in Washington as a Member of Congress, 4 years in the House and 26 in the Senate. During that time I have had the privilege of serving with seven Presidents. Every President, every candidate for the presidency, has declared to the people of the United States that he or she will be an education President. So there is nothing unusual about the present President of the United States.

All Presidents have said they are going to be education Presidents. And yet the picture of education in the United States has not improved in the last 30 years. In fact, in my mind it has gotten to a stage where I think it is a crisis.

For example, I look upon today's education as a slight improvement over what it was 30 years ago; 30 years ago it was without question a system set up for middle income whites. All the school districts had set up policies to establish educational systems that were geared for the middle income white, no question about that.

Today we see improvements in that. Instead of seeing father and mother with white faces, you have some with black faces and some with brown faces. If that is an improvement, so be it. But I do not believe that there has been any major change in the thrust of our education of our children.

Second, about 6 years ago the Secretary of the Department of Education issued a report, which for some reason did not attract much media attention, but it just horrified me. The report said rather simply that 52 percent of our Hispanic adults in the United States are functional illiterates, that 47 percent of our adult blacks are functional illiterates, that 17 percent of our adult whites are functional illiterates, and 13 percent of the graduates were functional illiterates, 6 years ago.

Apparently the numbers have not changed. If any change, it is for the worse. By "functional illiteracy," they defined it as anyone who has a reading and comprehension of a third grader.

We have spent millions of dollars to entice and recruit young men and women to serve in our armed forces. I am the chairman of the Defense Appropriations Committee, so I know something about this business. Today, notwithstanding the dollars we spend in recruiting and all those expensive TV ads, we find that eleven percent of our volunteers are in category IV. Category IV is a nice military description of a functional illiterate.

I am pleased to say that this has improved. At one time it was as high as 20 percent of our recruits. This was when our economy was bad and men and women were looking for work; they found the military to be a major source of employment. But today 11 percent of our recruits are functional illiterates.

They are the men and women we call upon to handle these computers. The warfare is not like the old days, where a man saw an enemy eye to eye and did his best to destroy each other. Today you

hardly see the enemy. You see via screen on a computer and you have to know how to keypunch.

But for the 11 percent we have to spend millions of dollars teaching these functional illiterate category IV's how to read and write, so they can read instruction tabs on equipment.

Then I have been advised by psychologists and social scientists that an important element in the development of children is a matter of pride, self-pride. In the last 30 years I have seen two movies that seem to instill pride in certain ethnic groups. One was the movie "Roots". Well, that is the only one. I am still waiting for another "Roots" to come out. And the other one was Stand and Deliver.

And yet we know that 50 years from now the demographics of the United States is going to change. It is not going to be the demographics that we found 200 years ago. The majority of this country will be made up of blacks and Hispanics.

We are not doing anything about that. It is very important. But we find that it is better to spend money for other purposes.

We are going to be introducing a measure that calls for a piddling $10 million, because that is about all the Congress will support, to add to whatever we are spending on public television.

Public TV at the present time spends about $40 million for educational programming, children's programming. Of that amount, the national government contributes about half. We are going to add to this.

I think it is a crisis. We are not ready for the rest of the world; we are getting worse. We talk about high tech and trade competition; we are not preparing our young men and women to participate in this highly competitive world.

My concern is that 50 years from now you will have a society, a very sad society, of haves and have-nots, of great extremes, of men and women of great wealth and a large group of impoverished people. We are heading towards that. And you will have a strong military. Those two things combined are ingredients for disaster.

I said in my beginning we all—every President wanted to be an education President, but strangely we have never had an articulated program to develop education in the United States. And it has always been patchwork: Let us add $5 million to this, or let us add $2 million to that, or let us emphasize the three R's, or let us, as the former President of the United States with much seriousness and sincerity said, education begins at home; that is the American way, mothers and fathers will teach their children.

And yet, a large number of our mothers and fathers are they themselves functional illiterates, and we are telling them to teach our children.

Another observation: We have come to a stage where we have placed an extraordinary, I would say, load upon the shoulders of our teachers. At one time teachers were highly respected members of the community; they are no longer the most respected.

Second, they were well paid, but they are no longer the best paid. And third, today we want them to be, in addition to being a teacher, a babysitter, a religious educator. The folks do not teach their kids religion; they want the teachers to do it now—prayer in school, not prayer at home.

The time has come—I hope it is not too late—when we must get together, come up with a comprehensive program on what to do about our young people, set goals, and go after it. It is not going to be easy.

You look at this room here. I am the only one. Look at the media table. That shows the level of interest. Usually that table is filled with people and people are standing all around, but today I see five members of the press. And it is usually standing room only. There is a lot of room today.

Yup, we have got our work cut out for us. If you want a community of haves and have-nots—it may be a benign dictatorship with a strong military—we are heading towards that.

Do you think my observations make sense?

Dr. PEARSON. Oh, absolutely. The issue of the widening gap between the haves and the have-nots educationally is of critical proportion and it is almost on us. Right now in the year 1989, 51 percent of the students in the State of California are officially classified as a member of one minority or another. And by, I think it is 1993, that will be true of our school children across the nation.

And the problems in my field, in reading and writing, there are no literacy problems in the suburbs of Chicago in the State of Illinois. I mean, there are a few kids who have neurological problems and things like that. But you go to the near South Side of Chicago and illiteracy problems are of epidemic proportions.

And it is that association with poverty and crime that is so devastating. And all that does, I think, is begin us down the path that you projected for the future. And so I agree, the time is absolutely right to do something about it and to do it in a comprehensive way.

Senator INOUYE. Do you think we can do it with $10 million?

Dr. PEARSON. No. You mentioned how much money we spend on recruiting people for the armed forces. When is the last time you saw a TV public service announcement recruiting people to the teaching profession? I do not think we spend any money recruiting people to teach.

Senator INOUYE. Well, as chairman of this committee I decided about a year ago to spend maybe once a month sitting in front of the tube for 12 hours. And believe me, you try it, one day. It is terrible.

Dr. PEARSON. You could always watch C–SPAN and see all these things.

Senator INOUYE. No, I am just switching from channel to channel. And I recall one about 6 months ago that sent a strong message to me. I happened to flick it on and a public service announcement appeared on the screen, and it says "Just say no." Oh, it was beautiful. It was a Hollywood actor, well known. He said, "Just say no."

As soon as that commercial ended, the pink flamingoes came out, and then there was a huge, beautiful, slick white yacht, and on that yacht beautiful men and beautiful women were dancing, men with gold chains around their neck, women with half their body exposed. These were the beautiful people, arriving in Rolls-Royces and Mercedes-Benzes, drug dealers.

I just thought to myself: Now, what message are we sending to the young people? That is the way life should be.

Ms. HILL. Let me just say that just recently I was very pleasantly shocked to see a public service announcement on public broadcasting about respect for teachers. I was really startled because it is the first one I had ever seen, and I was very pleased about that.

The message you suggest, I think, is the very critical point. It does not do much good—in this case it was a very well known television actress, who did an excellent job of presenting the message, but it was the typical talking head. She was just sitting there, looking and talking, and then immediately we go back to the regular programming.

I think that the program Square One I referred to earlier is an instance of going beyond that, because what it attempts to do is to take the sorts of things that youngsters are familiar with on television and turn them, where their interest is really incited—things they are interested in—and turn that to the advantage of getting the students motivated—that is the key word—motivated toward a challenging mathematics problem.

I think there are ways to take these things we typically see on television—and in some ways turn them to an educational advantage. But I think that takes enormous skill, lots of talented personnel, and, I am pretty sure, a pretty big budget.

Again, I see television as having a remarkable capacity to do part of the job. In my field, mathematics, that job is, as I said, to motivate, to interest, to get youngsters excited about a subject that they often find very, very dull because they really do not see the subject as it is.

So it is a mixed picture. But I think we can use a powerful medium to do much, much better than we do now.

Dr. DUFFEY. Mr. Chairman, I think your statements are very prophetic. Prophets do not always get invited home for dinner, as you know.

I think there is a new element now in this debate, those who are trying to raise these questions, and I found that very eloquently expressed from an unexpected source last Sunday. It may have been in the Post that Herb Stein was writing about the current budget situation and the comment people make, we cannot afford it.

I would not minimize the impact of the ability in this Congress, with the help of people who care about this—and there are a lot of parents who care a great deal about it—to start this endowment; $10 million could make some impact.

There are a lot of talented writers and young people in the television industry today who find no recognition or reward or alternate opportunities. So I think that it is a not insignificant step.

But I agree with you that somehow there is a rather ominous sign that this is a society, as I tried to say earlier, that, number one, does not have a sense that the children of the generation are really our children. We have a very possessive, kind of atomistic view toward the next generation.

And second, that what is at stake really is the viability and the future of the society. It is now too carefully documented for us to turn away from it that children are being neglected and are, to use a current term, many of them, a quarter of them at least in this country, at risk.

But I believe that what you are proposing is a question of lighting a candle in a dark time, an important step, and I hope very much that you will find the support both in the Congress and certainly outside to make that step at this point. It is an important one.

Senator INOUYE. Well, I hope we can work together, because I still think it is a crisis now, a terrible crisis. In times of war we are able to mobilize the great minds of our nation, all the captains of industry, to preserve the society and defend our shores. I think we have reached that stage here.

Dr. DUFFEY. I agree with you.

Senator INOUYE. Thank you all very much.

Our next panel consists of: Dr. David Hamburg, President of the Carnegie Corporation of New York; Dr. Aletha Huston, Professor, University of Kansas and Co-Director of the Center for Research on the Influence of Television on Children; and Dr. Daniel Anderson, Department of Psychology, University of Massachusetts, Amherst.

Dr. Hamburg, it is good to have you here, sir. Please.

STATEMENT OF DR. DAVID HAMBURG, PRESIDENT, CARNEGIE CORPORATION OF NEW YORK

Dr. HAMBURG. Thank you very much indeed. It is a privilege to be here, Senator Inouye.

I submitted a statement for the record and I want to use that just as a takeoff point for some brief remarks that go beyond what is in the statement.

It is a privilege to be here, and especially with you, sir. I am very grateful to you for your distinguished service on the Carnegie Council on Adolescent Development, one among many, many public services that you have given during your career. And I found your statement just now profound in its insight and moving, and I hope that the nation will take seriously what you have said.

From our experience at the foundation and the work we support on the issues you discussed, I believe that you are right on.

Now, I suppose I am here because of Andrew Carnegie's creative philanthropy starting more than a century ago in the field of education in every aspect, for example almost 3,000 libraries in this country and abroad. Learning in and out of school was a kind of passion for him, and it is reflected in our foundation and many other of his philanthropies.

In the second half of this century, we have seen the mass media become, for better and for worse, an important vehicle of education for all, and particularly for reaching everyone, including those in poor communities, an immense potential and largely, unfortunately, a potential that is not yet fulfilled.

Still, it is a new phenomenon. When you and I were boys there was no television, and I think as a society we are still learning how to make good use of this medium for educational purposes and the other, the associated new technologies that are coming on stream that have been referred to.

Television is a vast school, in effect. What do I mean by that? Well, the time of exposure that you referred to in your opening

statement. Each day, each week, each year during growth and development we live with television.

The exposure is vivid and immediate. It captures the attention, and attention is the foundation of learning. Without attention there is virtually no learning.

Then there is the pervasive availability of television in our culture. There is the duration of our exposure, from infancy to forever, throughout the entire lifespan.

And finally, it should be emphasized the importance of observational learning in human adaptation. For millennia it is an important part of our history as a species that we learn by observing. To a great extent the sequence observation, imitation, practice is at the heart of the learning experience for young humans.

So for all those reasons, television is potentially enormously important and we undoubtedly learn a great deal from it. It is big league education, whether so intended or not. The power is there. That says nothing about its uses, the uses of the power. That is a separate problem.

Now, if it is education, Carnegie Corporation of New York, a foundation set up by Andrew Carnegie in 1911, is interested in any form of education. Before I came to the foundation, we had the great privilege of playing a role in the creation of public broadcasting in this country through the first Carnegie Commission, and we had the privilege of playing a role in the creation of Sesame Street.

In recent years we have been very active in helping to support math and science programs like 3-2-1 Contact and Square One that you heard referred to this morning, Reading Rainbow that you referred to.

We have been very interested in the question of the videocassette recorder and its uses in the schools or in organizations related to schools, the videocassette libraries for educational purposes. And since 1984 we have conducted a series of conferences on TV and education exploring ways to enhance the education contribution of TV, and that is the basis for my brief remarks.

We are seeking a positive approach towards fulfilling the potential of TV for education in a constructive sense, that is fostering healthy development, conveying accurate information, stimulating interest in education, stimulating interest in health, taking care of oneself, stimulating interest in human relationships and conflict resolution, stimulating interest in the wide world around us in a time of an interdependent global economy.

But there is plenty to worry about. In my original field of medicine we have a dictum, that is first of all do no harm. And there is plenty of harm being done, however inadvertently.

In 1987 there was an issue, for example, of the Journal of Social Issues, a volume of the Journal of Social Issues, devoted entirely to research on television violence and anti-social behavior, an old story but nonetheless an important one.

So there is plenty to worry about, and yet the educational capacity of TV is emerging in research of the past decade, however it may be used. And we have to give more attention to how we use it for constructive purposes.

Maybe the different sectors of the nation can work together to improve the uses of television, especially, as Dr. Hill said, to stimu-

late interest in and zest for learning, the motivational aspects of education.

Now briefly, let me state several lines of research evidence on the educational potential of TV. And this research is quite a recent matter, mostly in the past 10, 15 years, but I think it is pretty conclusive about what can be done with television.

First, television can teach a wide range of skills and behaviors that are important for the intellectual and interpersonal development of children, and Sesame Street, which we are so proud of, is a good example. The Electric Company is another.

You can facilitate reading skills, you can increase self-esteem. There are a lot of things that you can do that are not obvious with the wise use of television.

Second, there is research evidence that television can stimulate enduring interest in what children need to learn, for example studies of 3-2-1 Contact, stimulating curiosity about problem-solving in the upper elementary school grades.

Third, television can both entertain and educate simultaneously, vividly illustrated by Sesame Street. Seeing Big Bird in here this morning made it clear how much fun it is. Learning can be fun, and indeed there is a connection of learning for survival and play in a long and honorable tradition of human history for millenia.

The fourth point, the research has shown that involving parents or older siblings or teachers or other caring adults in television viewing increases substantially the child's learning as compared with viewing alone. Discussing with the child what has been observed can reinforce learning and shape its direction.

In my statement I made reference to the desirability of connecting critical viewing skills with the current interest in critical higher order thinking skills of the kind that Dr. Hill and others referred to this morning. We are doing very little of that at the present time.

Fifth, television can open the eyes of children to the world around them, the whole world. It can stimulate interest in other cultures and respect for human diversity, so important at a time of an interdependent world economy, as well as for conflict resolution.

Sixth, research shows other countries are using television in education more effectively than the United States. We have talked about the U.K. and Japan. In fact, in Asia, Latin America, as well as Europe, there are many nations that have much more educational programming on the air. In some of them, mothers and teachers are systematically involved in sharing the experiences, with demonstrable educational benefits.

And finally, the seventh point about the research evidence, some evidence that television need not be a school for violence, but can indeed be used in a way that reduces hostility between groups. We need to consider carefully the constructive use of this powerful tool to promote compassionate understanding, non-violent problem-solving, and decent inter-group relations, highlighting shared human experience.

Twenty years ago when Carnegie helped to create Sesame Street, there were several lessons learned that I want to underscore very briefly.

One is the mode of creating it was to bring together the strongest experts in child development from the scientific and scholarly community and connect them with the most creative people in the television community. So connecting the scientific and scholarly community with the television executive and creative community is a very important function that we need to strengthen at the present time. It is a potent combination.

Now, also in Sesame Street in creating it, there was attention given not only to the cognitive skills, as it were marketing numbers and letters, which was important, but also attention was given to human skills, interpersonal skills. Moreover, Sesame Street made use of the historic link between education and fun. The joy of learning is at the heart of Sesame Street.

So the Street, Sesame Street, is much more than a place; it is an atmosphere. As Professor Gerald Lesser of Harvard has commented, who was one of the creators, he said: "In this atmosphere of Sesame Street, people of different ages and personalities, of different cultural backgrounds, live together, treating each other with kindness, with warmth, affection and generosity, respecting, appreciating, and enjoying each other's differences."

That is very important, Mr. Chairman. If you ask me why Sesame Street has lasted for 20 years, I would say, and in so many countries, I would say one of the reasons is that atmosphere of warmth and generosity and respect for diversity.

The atmosphere of respect for differences is clear and vivid in Sesame Street's international adaptations, and some research connected with that, very interesting, particularly in Canada and in Holland. They have looked at different cultural groups, often groups in conflict within Canada and within Holland, and they find that cross-group friendships among children are more likely to occur among children who have seen Sesame Street, the regular watchers, than those who do not have the chance to see Sesame Street.

That is at least consistent with the proposition that the experience of this atmosphere of Sesame Street tends to overcome intergroup differences.

Now, that is no accident. There were specific educational goals and techniques set out, curriculum topics, in the creation of Sesame Street, and they are pertinent to these research findings in Canada and Holland and elsewhere.

One is that in the beginning Sesame Street set out to show children a variety of alternative ways to resolve conflicts without resorting to violence.

Another is it set out to teach children to take another person's point of view. It also set out to teach children how to listen.

It set out to teach them examples, show them examples of cooperation, for example sharing, compromise, taking turns—very important. It set out to show children constructive ways to enter a new social group—difficult to come in as a stranger, how to do that.

And finally, importantly, it built a sense of identity and self-worth. You referred, Mr. Chairman, to "Roots" and to "Stand and Deliver." That kind of orientation of pride in one's identity and building self-esteem was part of Sesame Street from the beginning.

I think all those factors contribute to its enduring quality and its contributions. These latter ones perhaps had less attention than have the cognitive skills. Both in my judgment are about equally important.

So there are many lessons from Sesame Street: the process of its development, its content, the concomitant research, and the worldwide experience. We need to have many more Sesame Streets.

One further quick word on new technologies. We are in the midst of a VCR revolution. We are close to the point where half the homes in the country have videocassette recorders. Many schools do. Many more should have. The videocassette recorder is a great smash hit in entertainment, but it also has a lot of potential for education.

In the schools it can be used at the right time, when the teachers and the students need it for a particular purpose. They are not at the mercy of the programming of on-air schedules, but rather to use it when they need it, in the way that they need it. They can stop, replay, look at something in detail, clarify the meaning, pull out an underlying theme.

Also, the VCR has a lot of potential for after-school activities. Our kids are doing a lot of things after school with free, unsupervised time that are dangerous. If we can have interesting, lively, enjoyable, structured programs that are also constructively educational after school, it will help this nation.

And one thing to do is to use VCR's of high educational content as a stimulating point for discussions, hopefully with a modicum of supervision or guidance, but in any case a discussion of important topics among peers with the VCR kind of stimulus.

It is worth underscoring that television and also radio are probably the single most effective way of reaching low income Americans, who rely on these media for information far more than middle class people do. Because health-damaging behaviors are also most prevalent among those of low socioeconomic status, it becomes especially important to ensure that radio and TV carry positive health messages, useful information, skills to apply the information.

There is large-scale research, particularly from the Stanford University cardiovascular disease prevention work, that shows how you can effectively reach into Hispanic communities, find out how to reach them through the media that they take seriously. And we need more research on that and more application of that research.

The media can indeed help to change behavior for health. We have what you might call some public health disc jockies around the country, playing very popular music, very attractive music, some on black radio for example, that also carry useful information and skills pertinent to maintaining your own health and those you care about.

It is not only a matter for the on-air broadcast or for the schools. It is very important in churches. We have a black church initiative, which is a way of reaching some young people who could not otherwise be reached very readily, and the VCR has a useful role to play there, and in community organizations and in libraries.

We have made grants to libraries across the country trying to revitalize the Carnegie libraries through the availability of a high quality library of educational materials and VCR's in the library.

People these days, you know, are dropping their kids off in the library. They do not know what else to do with them in terms of child care. It is possible that virtue might be made of that necessity by having structured programs of various kinds, one of which could be the stimulus for discussion of important topics through watching educational videocassettes.

It is not expensive, but some support is needed for that kind of enterprise.

I have mentioned in the text and I will not get into it now a more fanciful, but very intriguing, possibility raised in a 1985 Carnegie conference, a long shot possibility, but some day, a national educational telecommunications corporation, somewhat akin to the national interstate highways, to serve that kind of function for all audiovisual materials.

There are models. South Carolina, the State of South Carolina, has a very useful working model. Some states are working cooperatively to see what they can do along the lines of South Carolina. And sooner or later, it is my prediction there will be a ferment that will stimulate a Federal role, because without a Federal role there could not be the analogy to a Federal interstate highway system for an educational telecommunication system.

Well, these are only a few examples, Mr. Chairman, of past progress in the fulfillment of the educational potential of telecommunications. Its constructive use could be greatly strengthened by sustained and thoughtful attention of the sort exemplified in this very hearing.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF DAVID A. HAMBURG, M.D., PRESIDENT, CARNEGIE CORPORATION OF NEW YORK

Of all the technological advances of the 20th century, the emerging telecommunications revolution is one of the most important for the future of our species. This technology provides worldwide, instantaneous, comprehensible networks with high emotional impact. It can link different groups, different cultures, indeed the entire planet, as never before. The revolution in telecommunications has come close to making this country a single large community, and may some day have a similar effect on the world as a whole. Clearly, television provides interests and pleasures that are novel and attractive. It provides a common level of information about what is going on in the world. It contributes to the revolution of rising expectations: everyone can see the symbols of affluence. Television can educate children with Sesame Street. On the other hand, it can be a powerful distraction from school. It can interfere with reading. It can be a school for violence.

There is some research evidence that television need not be a school for violence, but can indeed be used in a way that reduces intergroup hostility. We need to consider carefully the constructive use of this powerful tool to promote compassionate understanding, nonviolent problem solving, and decent intergroup relations. Television can portray human diversity while highlighting shared human experiences--including the common humanity of our adversaries, even in times of stress. But so far we have had only glimpses of its potential for reducing intergroup conflict.

Scientific evidence is growing on the educational capacity of television in a variety of contexts. The research is extensive and positive, though it was not until a decade ago that behavioral scientists made an intensive effort to study the potential advantages of television in education. There are several key findings:

1) Television can teach a wide range of skills and behaviors that are important for the intellectual and interpersonal development of children. For example, Sesame Street teaches various skills needed by children, especially children from poor communities, to enter the early grades comfortably. The Electric Company helps children who are failing to learn to read in the early grades; the program facilitates reading skills that help such students keep up and also tends to increase their self-esteem--a process that has general significance for later learning.

2) Television can stimulate interest in what children need to learn. For example, 3-2-1 Contact stimulates curiosity about scientific inquiry and problem solving in the upper elementary school grades. Such stimulation can be especially useful for those who have historically been "turned off" to science--e.g., girls and minority children.

3) Television can both entertain and educate simultaneously. This is vividly illustrated by Sesame Street.

4) The involvement of parents, older siblings, or teachers in the young child's television viewing increases substantially the child's learning. Discussing with a child what has been observed can reinforce and shape the direction of learning.

5) Television can open the eyes of children to the world around them--the whole world. It can stimulate interest in other cultures and respect for human diversity.

6) Research shows television is used more effectively for education in other countries than in the United States. In Asia and Latin America as well as Europe, many nations have much more educational programming on the air. In some of them, mothers and teachers are systematically involved in sharing these experiences--and the educational benefits are impressive.

Moreover, there are now additional video technologies that offer tangible promise for education--with more to come. In principle, education from the early years onward can utilize multiple media, taking into account the distinctive strengths and limitations of each medium--television videocassettes, videogames, computers, and books. One method of instruction is not necessarily the best for teaching every subject. Television is good for presenting physical transformations and spatial relations as well as for portraying actions. while print is stronger in presenting the thoughts of a person, videogames are better than television in giving a child a sense of what it is to make a discovery. The videocassette recorder (VCR), now spreading so widely for entertainment purposes, also has great potential for education. Unlike on-air television, the VCR can be stopped to analyze a specific scene; a teacher can rewind to an earlier scene to clarify a thematic connection; portions can be viewed in slow motion for close inspection. In short, many opportunities arise from systematic, explicit consideration of television and related technologies for educational use--and for learning from the world's experience.

Children between the ages of two and eleven spend an average of four hours a day watching television, and daily averages have increased every decade since television was introduced. Twelve- to seventeen-year-olds watch somewhat less, but still average 22 hours a week. According to one authoritative estimate, during

their first sixteen years of life children watch between 10,000 to 15,000 hours of television, probably more time than they are engaged in any other activity (including schooling and talking to their parents) except sleep. One would have to ignore human learning capacities to suppose that so much television viewing has no effect.

Why do children watch so much television? Television seems to serve myriad functions in children's and parents' lives. Children's reports of their reasons suggest that they use it as a means of escape when they are angry or worried, as a source of company when they are lonely, as a route to fantasy, as a necessity if they are to join in the next day's conversation with friends at school, and to fill in time. For parents, television often provides the main leisure activity in the home and is a useful babysitter for parents who are too tired to think of other activities for their children or who are occupied with work, household or otherwise. It also, of course, provides a window on the world, much as car and air travel do. Overall, children from lower-income households watch television more than children from higher-income households. Poor parents may accept a higher level of television use because they have fewer resources with which to support other time-use alternatives or because they live in neighborhoods where it is unsafe to play outside.

In 1972, the Surgeon General of the United States commissioned a report on the effects of television on behavior, focusing on the effects of televised violence on children and youth. That report confirmed the pervasiveness of television viewing in the United States but noted the conspicuous lack of information about its relationship to the psychological growth and development of children. Ten years later the National Institute of Mental Health commissioned a second report, which bore witness to the remarkable growth of research on television over that decade. Although a great many of the studies still focused on aggression, many other aspects of development were studied, including imagination, educational aspirations and achievements, social beliefs, health knowledge, and sexual understanding. The report concluded that numerous studies using different methodologies provided evidence that heavy viewing of violent programs contributes to aggressive behavior. It also pointed to negative effects in other areas. For example, there is a negative association, although no causal connection has been demonstrated, between heavy television viewing and academic achievement, particularly on reading tests. This holds true even when socioeconomic status and ability level have been taken into account, although the association is much smaller then.

Some people believe that the greatest problem with television is not what is shown on it but the activities it displaces. Others disagree, arguing that it has merely displaced the reading

of comics and other such activities. It may be that heavy television use is not a significant problem for children from privileged homes, who may watch a lot of television but in the context of an already enriched environment. However, the greatest overuse of television is by children who already have the poorest life chances. For them, it may well add another element to their disadvantage.

The upgrading of science education through the use of video technologies offers significant learning opportunities in the early years. There is considerable evidence of weakness in science education throughout the nation. The present public concern with that weakness is due to the growing recognition that the United States economy is being transformed by science and technology. The nation's position in the world economy is at stake, and a better educated work force is necessary. Beyond the economic case for greater scientific literacy in the American public, the overriding reason for improving science education is to strengthen democratic citizenship. The pervasive influence of science and technology requires citizens who can understand it and who can be involved in an informed way with many issues. There is a clear danger that modern technical society can leave out vast numbers of people--leaving them feeling remote and alienated from these arcane developments.

The range of relevant institutions involved in the sustained upgrading of science education must go well beyond the schools to include television, radio, newspapers, magazines, museums, scientific and professional societies, parent-teacher associations, and certain civic and community organizations.

The schools associated with the turbulent period of early adolescence constitute a battle zone of education with many casualties. Can television help to diminish the educational casualty rate? The Children's Television Workshop has produced the series, 3-2-1 Contact, aimed at an eight- to twelve-year-old audience. The series especially encourages minorities and girls, by using them as the chief characters who visit and talk with scientists, and by using women and minority scientists as role models. While this type of program cannot teach science, it can do a good job of making science exciting and accessible. Television can certainly stimulate interest and curiosity in the world around us, and provide our orientation to science that is attractive for young children, including those in disadvantaged circumstances.

It is useful to keep in mind recent research on shifts between 1960 and 1980 in the influences upon 13- to-19-year-olds that have changed their values and behavior. One striking research finding is the ascendency of television and radio. As a practical matter, this means that educational reform must take the media seriously into account. In education for health, for

example, there are a few systematic studies showing that mass media can be useful in promoting healthful behavior.

The mass media, particularly radio and television, are probably the single most effective way of reaching low-income Americans, who rely on these media for information far more than middle-class people do. Because health-damaging behaviors are most prevalent among those of low socioeconomic status, it becomes especially important to ensure that radio and television carry positive health messages as well as the negative ones so evident in current advertising and programming. Some ingenuity has been shown--for example, public health disc jockeys. In large-scale research, the Stanford University Heart Disease Prevention Study provides encouraging information. The media can indeed help to change behavior for health.

It is my belief that television can stimulate interest in education and can perhaps do an especially important job with respect to science and technology. It can make the subject lively, can attract people to some complex ideas with all the tricks of the trade, and can legitimate the subject, especially for poor children. The full job of science education cannot be done by television, but television can offer a valuable introduction to basic ideas. The best scientists can work with the best teachers and creative television programmers to provide clear, lively explanations.

There are a variety of ways in which the educational materials could be developed and made widely available. One is by strengthening public broadcasting. Another is by linking television producers with scientific organizations. Such contacts could be strengthened to promote factual accuracy on the one hand and creativity on the other. It is important to involve science teachers in the process and offer guidance material for teachers. A key element is the distribution of videocassettes in the classrooms--and indeed in homes and community organizations. In principle, first-rate, accurate, lively, interesting science materials could be in every classroom in the country by this kind of vehicle.

Is it feasible to create a national educational telecommunications delivery system that combines in a coherent way all the most promising technologies? In principle, it should be possible to establish a National Educational Telecommunications Corporation as an independent entity to design, build, and maintain a modern educational telecommunications system that effectively links all schools and colleges in the nation to sources of creative audiovisual learning materials. An interesting analogy here is the interstate highway system. That system was made possible by the leadership and funding of the federal government. Every classroom would be supplied with a VCR, a video monitor, a radio, an audio tape recorder with

playback, and a computer terminal. There would be a pool of material over a wide range of content and format generated for a variety of purposes. Each teacher could decide which material is most appropriate, when the impetus and support are very diverse. There would be no censorship, no filters in the flow of material, no ideological barriers, and no economic barriers. There are, in fact, a number of existing local and state systems that demonstrate on a smaller scale the possible successes, the weaknesses, the problems of such a nationl system. So far, the efforts are pluralistic and likely to remain so in the near future. They suggest, however dimly, a vision of what the future might bring.

The potential of television for education is clearly demonstrated by Sesame Street, The Electric Company, 3-2-1 Contact, and Nova. However, this potential is largely unfulfilled so far. This great medium of education--education for better and for worse--has a very long way to go. In the context of the current ferment on educational reform, video technologies must be brought constructively into the national debate.

Carnegie Corporation's Activities in this Field

Carnegie Corporation has a long history of interest in and support for public television and has made other contributions in the field of broadcast. Its role in the creation of public broadcasting and of Sesame Street are landmarks in the Corporation's history. Moreover, it has long been deeply involved in efforts to improve education on all fronts.

In recent years, Carnegie has made grants to strengthen the educational capability of television in each of the Corporation's program areas. This includes our international activities as well as the domestic ones. These grants tend to cluster in four categories:

1) Support of exemplary programs, usually on public television e.g. Degrassi Junior High; Square One, and the Reading Rainbow; research for a potential new Children's Television Workshop series on reading and writing.

2) Efforts to reassess policies that govern children's television e.g. a grant to Action for Children's Television.

3) The role of new video technology e.g. a grant to the American Library Association to create a market for and develop a distribution mechanism to allow access to high-quality children's videocassettes through the public library system.

4) Efforts to inform the commercial networks about their educational impact, especially on adolescents e.g. Center for Population Options works with Hollywood writers and producers on issues of adolescent sexuality; Scientists' Institute for Public Information did a seminar on research on television and violence; efforts to work with producers as part of Carnegie's interest in the media e.g. the American Children's Television Festival.

The need for greater scientific literacy for the population and for the economy is obvious and the shortage of trained science teachers makes the mass media particularly important. In a grant to Stanford University, we are fostering the development of an innovative life sciences curriculum for the junior high school and middle school. The training of teachers for this new curriculum relies heavily on videocassettes prepared by the Stanford faculty.

With respect to health, it is noticeable that other countries have used the electronic media much more self-consciously and effectively for health promotion and disease prevention than has the U.S. This points up the desirability of systematic international comparisons so that we can learn from the experiences of other countries.

Given the growing interest of policymakers in educating parents and other caretakers in childcare and early childhood services, this committee might also be interested in the potential of television for the education of parents and childcare providers. We made a grant to develop videos for family daycare providers and another grant to prepare materials for Hispanic parents. There is an urgent need to develop efficient means for training in childcare, and television might be helpful on a large scale.

We are now looking into the area of critical television literacy skills to determine what might usefully be done. We have talked with those who have conducted research on whether teaching critical viewing skills is possible and who have developed curricula for parents and teachers. The consensus is that teaching such skills is possible, but that it has been very difficult to incorporate such instruction in the schools. Educational administrators have not typically seen critical viewing skills as central to the goals of the school. Teachers have not been prepared to instruct children in these skills. The teaching of viewing skills is one element of current concerns about developing more critical or "higher order" skills among American students.

Research and curriculum development in television literacy has declined since the early eighties. The existing curricula and materials are, for the most part, still appropriate for classroom use. The current need is to encourage implementation of available curricula and materials. The key would be to stimulate educational decisionmakers to view teaching critical television skills as important and to insure that teachers are adequately prepared (and have the equipment) to teach these skills. Television or media literary is one vehicle for teaching critical thinking skills so badly needed in a modern, technically-based economy.

Another problem area is the languishing research base for media, education, and child and youth development. It would be much more productive if research and evaluation were intimately connected with the development of television for educational purposes as was done with Sesame Street. The research base on the influences of television has not kept up with the rapidly changing technologies. Survey information on media usage patterns by children and youth are over a decade old. It is a serious challenge for science policy to stimulate and support objective research on this vital sector of modern society.

These are only a few examples of paths along which progress might well be made toward fulfillment of the educational potential of television. It is a medium of vast educational capacity, for better and for worse. Its constructive use could be greatly strengthened by sustained and thoughtful attention of the sort exemplified in this hearing.

Senator INOUYE. Thank you very much, Dr. Hamburg.
Dr. Huston.

STATEMENT OF PROF. ALETHA HUSTON, UNIVERSITY OF KANSAS, CO-DIRECTOR, CENTER FOR RESEARCH ON THE INFLUENCE OF TELEVISION ON CHILDREN

Dr. HUSTON. Thank you very much, Mr. Chairman.

I am particularly interested to see the kind of legislation that you are considering in this hearing come to light. Much of our public policy debate about television in this country has been concerned with its negative effects. And indeed, those should be of concern to us.

But we should not think that it would be enough to say television is not doing our children any harm. We need to be thinking about how television can be doing our children some good. That has been my major focus in the 20 years of research that I have done on children's television.

Somebody once said that for children all television is educational, whether we mean it to be or not. Children start to watch television very early in life. Television reaches children long before other educational systems have any contact with them at all.

People put their infants in front of the television set and report that it quiets them. We have data observing children between 12 and 18 months watching Sesame Street. They point to the screen and name the characters and otherwise respond to the program. So television is our earliest avenue into educating our children and often is influential many, many years before they reach formal education.

Several people in this hearing have said it, but I will say it again: There is a lot of evidence that television can be effective for educating children, and I mean publicly broadcast television.

Sesame Street and Electric Company broke ground in this area 20 years ago by putting together the talents of educators and child development specialists with television production and creative people. There were at the beginning careful and well-designed evaluations of the effects of Sesame Street showing that children learn letters, numbers, reading, and other cognitive skills from these programs. In several parts of the country these evaluations were carried out, and they were particularly focused on low income children, who were the target of that program.

We have recently conducted a longitudinal study where we followed the same children over a period of two years and found that children who were heavy viewers of Sesame Street improved their vocabulary over that time and reached school with better pre-reading skills than the children who had not viewed the program.

Reading Rainbow has been mentioned. Its goal is the motivational goal that some of the other panelists have emphasized. It is not designed to teach children how to read. It is designed to teach them to want to read and to interest them in books.

And it seems to do that successfully, as evidenced by the fact that you mentioned. When a book is on Reading Rainbow the demands for it in the libraries and bookstores go up in the subsequent weeks.

Planned programming can also convey pro-social behavior and values. One of the longest running programs for pre-school children is Mr. Rogers' Neighborhood. In the 1970's several investigations demonstrated that children learned many positive behaviors, such as sympathy, helpfulness, task persistence, empathy, and imagination from viewing that program.

There were also some commercial television efforts, most notably Fat Albert and the Cosby Kids, in the seventies. In that program they dealt with many issues of importance to children, such as drugs, divorce, friendship, child abuse, and children understood the messages in the program.

Let me turn now to the question of whether children will watch educational television if it is out there. People often ask me, won't children just turn on the cartoons? Even if good television were available, would they watch it?

I think the answer is clearly yes, and certainly Sesame Street finally broke the stereotype that educational television was only for the very small elite middle class audience. It has reached many, many children from all different social and economic groups.

We found in our study in the 1980's that children from all socioeconomic groups watched educational programming somewhere in the neighborhood of 3 or 4 hours a week. Children like it, they will watch it.

Despite the evidence for the success and popularity of good educational productions, however, they are available almost exclusively on public television, and to some degree on cable. It is interesting that we keep mentioning the same programs. There really are not very many of them, and in particular there are not very many of them for children beyond the pre-school years.

Production declined in the 1980's. Funds declined and production declined, both on public television and on commercial television.

For instance, commercial network affiliates averaged less than 1 hour per week of children's informative programming in 1983. One analysis found a total of seven programs per week on the three networks combined that could be considered educational or informative in any way.

The major reason for this lack of programming is cost. Good quality programming is relatively expensive to produce and purchase. As Dr. Hamburg said, it requires the collaboration of a variety of experts. We do not just reel it out.

Moreover, on commercial stations it has to compete with product-related programs that are provided to stations at very low cost because they are subsidized by toy companies. In fact, it is the case now that educational and informative programs for children are not likely to emerge from the marketplace forces governing commercial television. It just is not going to work. It is too inexpensive to do other things.

So if we are going to use the enormous potential of television for educating our children, then government has to contribute.

The investment is worthwhile. Television is one of the most efficient and cost-effective forms of education. In 1975, Thomas Cook and his associates estimated that Sesame Street cost between $1 and $1.25 per child per year. Now, even if we allowed some increase for inflation, that cost is obviously miniscule by comparison to any other form of education that we know about.

Television cannot solve all of the problems, but it certainly is a worthwhile part of our educational effort. And as I noted, it is one form of instruction that will reach children long before many of our other educational efforts. It gets to them in the first or second year of life.

We have noted that most other countries do a great deal more for their children than we do with this attractive and powerful medium. They use it to meet the needs of their children for education and for entertainment, rather than to meet the needs of advertisers to sell products.

If the United States is going to have an educated citizenry in the next century, then we must make better use of this medium than we have done so far. And I congratulate you on your efforts to do that.

Thank you.

[The statement and questions and answers follow:]

STATEMENT OF PROF. ALETHA C. HUSTON, CO-DIRECTOR, CENTER FOR RESEARCH ON THE INFLUENCES OF TV ON CHILDREN, (CRITC) UNIVERSITY OF KANSAS

Thank you for the opportunity to testify about this very important issue. I am Aletha C. Huston, Professor of Human Development and of Psychology and Co-Director of the Center for Research on the Influences of Television on Children (CRITC) at the University of Kansas. I have conducted research on the influences of television on children for 20 years, beginning with an investigation conducted for the United States Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Much of my research has been concerned with the potential for positive effects of television.

Educational Uses of Television

For children, all television is educational, though most programming is not intentionally designed to teach.

Learning from television. Children begin to "watch" television in infancy; by age 3, they watch 2 to 4 hours a day on the average. In one investigation, children between 12 and 18 months often watched Sesame Street and responded to it by naming characters, pointing to objects, and laughing. Parents and children sometimes used Sesame Street like a "talking picture book," sitting together watching the program and talking about it.

Children form patterns of viewing quite early. How much they watch and what types of programs they watch are highly stable over the preschool and early elementary school years. Therefore, their early experiences with television have long-lasting consequences for their tastes in programming and their awareness of its potentials.

Children are mentally active when they watch television. Most do not fit the popular image of passive zombies; they choose programs and make active decisions to attend or not to attend. They think about what they are watching, and they often learn from it, as any parent who has heard a 2-year-old singing advertising jingles will attest.

The potential of television to educate have been questioned in part because the broadcast medium does not allow the "teacher" to be responsive to individual viewers' needs. The pace is invariant; viewers cannot ask questions or ask for repetition; the scheduling is inflexible; and it is difficult to build on earlier lessens. With the advent of inexpensive, portable videotape recorders, many of these limitations can be overcome. Tapes can be played and replayed, and they can be scheduled at the viewer's convenience. In fact, anecdotes suggest that children will watch a tape repeatedly just as they ask to have the same book read over and over. My 20-month-old granddaughter asks for her "Big Bird" tape so often that her parents can hardly stand to see it again.

Success of educational programs for children. Attempts to use television for instruction were begun in the 1950's, but they were focused on formal instruction, primarily at secondary and college levels. The late 1960's witnessed the beginning of a major effort to use broadcast television for teaching, stimulated in part by the widespread social concern about poverty and educational disadvantage

that characterized the mid-1960's. In addition, in 1967, the Public Broadcasting Act established a system of noncommercial stations with a mandate to provide diverse cultural and educational programming.

The most widely known venture of the time occurred when a group of educators, psychologists, television writers and producers combined their talents to create Sesame Street and Electric Company. Production techniques from advertising and cartoons were used to package information about reading, cognitive skills, self-esteem, and prosocial behavior. Since that time, other effective educational programs designed to teach science, math, and other skills have been created.

Evaluations have demonstrated that children learn letters, numbers, reading, and other cognitive skills from these programs. Sesame Street was evaluated in several parts of the country during its first two years. In the first year, children who watched the program frequently were compared with those who did not. In the second, the researchers used a field experimental design in which children were randomly assigned to view or not to view the program at home. The experimental group was given cable connections or UHF sets (necessary to receive the program) and their mothers were asked to encourage the children to watch the program. The control group did not receive extra TV reception aids or encouragement to view. Both groups of children took a test of cognitive skills before and after the viewing season (about 6 months). The results of the two evaluations are consistent. The children who watched Sesame Street regularly gained more than those who did not. Gains occurred for girls and boys from a variety of social backgrounds.

The conclusions of these studies were questioned for two reasons. First, their experimental viewing groups received "encouragement to view," a treatment in which parents were given information about the program, periodic visits from researchers, and other types of special treatment. Thomas Cook and his associates argued that some of the cognitive gains by children in the experimental treatment were a result of these extra features; therefore, the findings did not necessarily characterize effects that would occur in normal home viewing.

More recent longitudinal investigations have shown, however, that learning occurs from viewing even without extra interventions. We conducted a longitudinal study of children's "normal" home viewing between ages 3 and 7. Heavy Sesame Street viewers improved their vocabularies over the two-year period between ages 3 and 5 more than light viewers. They also had better pre-reading skills before entering kindergarten. About 3/4 of the children's viewing occurred without any adult present, so it is clear that they learned from the program without any adult help.

Similar evaluations were conducted for Electric Company. Children who saw the program in school gained from viewing it, but home viewing alone did not increase reading skills of children who were attending school. However, it is likely that preschool children, school drop-outs or other individuals not in school can

benef - from the show.

Reading Rainbow is a program designed to interest children in books and reading rather than to teach reading skills. Talented narrators read story books while showing slightly animated versions of the pictures. Many public libraries report a surge of requests for the books used on the program -- a sign of its success.

Planned programming can also be used to convey prosocial behavior and values. One of the longest-running programs for preschool children is Mister Rogers' Neighborhood. In the 1970's, several investigations demonstrated that children learned positive behaviors such as helpfulness, sympathy, task persistence, empathy, and imaginativeness from viewing the program. Some of these investigations were field experiments in which one group of children were assigned to view the program, and a control group watched another program. Children in the experimental treatments displayed prosocial behaviors in preschool and other natural settings playing with other children and adults. Among economically disadvantaged children, the effects of the program were enhanced by providing relevant play materials for verbal rehearsal and role playing of program themes after viewing.

Several other programs designed to teach prosocial behavior were produced in the 1970's. One notable success on commercial television was Fat Albert and the Cosby Kids. Issues of importance in children's lives such as divorce, friendship, child abuse, and drugs were presented. Numerous investigations demonstrated that children understood the messages of the program and were able to apply them.

Do Children Watch Educational Television?

Twenty years ago, educational television was stereotyped as dull or esoteric, with elitist audiences of highly educated viewers. To some extent that stereotype survives today, but it is inappropriate when applied to children.

One of the major achievements of Sesame Street was to demonstrate that a publicly available program could reach large numbers of children, including many from economically disadvantaged groups who are at risk for school problems. In the first year or two of broadcasting, although the program was much more successful than anyone had dared to hope, economically advantaged children did watch more than disadvantaged children. This difference in 1969 could have been due to the novelty of the program or to the fact that public television was not available on VHS stations in many communities. In our longitudinal study in the early 1980's, there was no difference in viewing Sesame Street or other educational programs based on family education and economic status. Children from all socioeconomic groups watched children's educational programs.

How Much Educational Television is Available?

Despite the evidence for the success and popularity of good educational productions, they are available almost exclusively on public television and, to some degree on cable channels. Moreover, there was a decline in availability during the 1980's. Few new programs were produced on public television, and commercial stations typically included almost no educational or informative content for children. For instance, commercial network affiliates averaged less than one hour per week of children's informative programming in 1983; there were seven programs per week on the three commercial networks combined.

Independent commercial channels -- those not receiving their programs from one of the three commercial networks -- broadcast syndicated children's programs, primarily non-informational cartoons. In one sample in 1983, two independent channels averaged four hours per week of informative children's programs. Few programs are age-specific; most are aimed broadly at the 2-12-year-old audience. Because most channels schedule children's programs during the same time slots, availability is even more limited than the numbers of programs might suggest.

Although informative programs on commercial television are rare, the exceptions are notable. Each network has occasional after school special programs (about once a month). There have also been creative efforts on Saturday morning such as Pee Wee's Playhouse, Fat Albert and the Cosby Kids, and Pryor's Place.

One major reason for lack of availability is cost. Good quality programming is often relatively expensive to produce and purchase. On commercial stations, it must compete with product-related programs that are provided to stations at very low cost because they are subsidized by toy companies. As a result, the "free market" provides little or no space for diverse and innovative children's programming.

Government and foundation moneys have financed most of the extant educational programs for children. Through the Corporation for Public Broadcasting, federal funds help to support public television broadcasts and production. However, for the responsibilities it assumes, public broadcasting is significantly underfunded. Only about 15% of the funds for public broadcasting come from the federal government; the rest is provided by state and local governments and by viewer and corporate contributions. It receives less than half of the $590 million recommended by a 1979 evaluation of the Carnegie Commission. In the 1980's, funds for public broadcasting were systematically cut, even when they had strong bipartisan support.

Agencies in the government, including National Science Foundation, National Endowment for the Arts, the Bureau of the Handicapped, and the Office of Education funded production of many of the educational programs produced in the 1970's (e.g. 3-2-1 Contact, Sesame Street, Freestyle). Again, the funding activity in these agencies declined significantly after the mid-1970's.

In short, educational and informative programs for children are not likely to emerge from marketplace forces governing commercial television. If we are to use the enormous potential of television for educating our children, then government must contribute.

The investment is worthwhile. Television is one of the most efficient and cost-effective forms of education. In 1975, Cook and his associates estimated that Sesame Street cost between $1.00 and $1.25 per regular viewer per year. Even allowing for inflation, these costs are miniscule by comparison to most educational efforts. Television also reaches children long before other types of formal education because they begin viewing in the first or second year of life.

Most other countries do a great deal more for their children than we do with this attractive and powerful medium. They use it to meet the needs of children for entertainment and learning rather than the needs of advertisers to make sales. If the United States is to have an educated citizenry for the 21st century, we need to make use of this valuable resource for informing our children.

The University of Kansas

May 2, 1989

Gina Keeney
Minority Counsel
United States Senate
Committee on Commerce, Science, and Transportation
Washington DC 20510-6125

Dear Ms. Keeney:

Thank you for the invitation to share ideas with members of the committee. What follows are replies to the questions you sent.

1. The general assumption is that children spend too much time watching television. Is this true? Is non-educational television harmful in iteself, or is it only harmful in that it takes time away from more educational pursuits?

The judgment about what is "too much time" generates considerable disagreement. In general, if children spend a great deal of time in any one activity, they are missing opportunities for other activities. A child who reads several hours a day might miss important opportunities for social interaction or physical activity. Children in the U.S. spend 3 to 4 hours a day watching television on the average, but those at the high end spend much more than that. I would argue that more than 3 or 4 hours a day is clearly "too much."

Excessive television viewing in and of itself, however, does not appear to cause cognitive deficits or poor educational performance. It is associated with obesity and low physical fitness, perhaps because of the inactivity involved and the tendency to eat snacks while viewing. Most of the harmful effects of television viewing are due to the content viewed. Therefore, the issue is not how much television children watch, but what they watch. Much commercial (non-informative) programming is filled with violence, social stereotypes, and other negative content. The advertising that pervades commercial television can be especially harmful to children who do not understand its purpose very well.

There is little evidence that television viewing takes time away from educational pursuits. When children do not watch television, they do not necessarily engage in anything educational. For instance, there is little evidence that infrequent viewers read more than heavy viewers, once family differences are taken into account. When television was first introduced, it replaced other media such as radio and movies rather than replacing reading or educational activities. Unfortunately, children do not spend a lot of time in educational pursuits on their own initiative even without television.

2. How does the United States rank in term of the quantity and quality of children's educational television that is available?

The United States compares very poorly with other industrialized countries. Japan, Israel, and most western European countries have stronger systems of publicly owned broadcasting than we do. They produce more educational programs for children, and they broadcast them at appropriate times for children.

Australia, which has a combination of commercial and state-owned television something like ours, has a much better record of producing educational and high quality entertainment programs for children. They assign an hour a day in the late afternoon to children's programs. Those programs must be approved by a board of citizens and professionals as meeting criteria of originality and quality.

3. Isn't parental encouragement the primary factor in getting children to wartch educational television, just as it is the primary factor in getting children to do their homework? Or is television an independent force?

Although parents are certainly important influences on children's television viewing habits, I don't think television viewing and homework are comparable in this respect. Publicly broadcast educational television is designed to be entertaining so that it will attract audiences on its own. Sesame Street is the best success story showing that this approach can work. Certainly, children whose parents encourage them to watch Sesame Street watch it more consistently than those without parental encouragement, but the latter group watch it. Moreover, parents are unlikely to insist that children view television in the same way they insist on completing homework. At most, parents may suggest programs or introduce children to programs. After that, the program has to hold the child's interest.

I hope these brief answers are of some help. Most of the people to whom you addressed this letter could, of course, write many pages on each of these questions. If I can provide any more information or resources, please feel free to call on me.

Sincerely,

Aletha C. Huston

Aletha C. Huston
Professor of Human Development and Psychology

Senator INOUYE. Thank you very much, doctor.
Dr. Anderson.

STATEMENT OF DANIEL ANDERSON, PH.D., PROFESSOR OF PSYCHOLOGY, UNIVERSITY OF MASSACHUSETTS AT AMHERST

Dr. ANDERSON. I will give you yet another estimate of the amount of time children spend with television. The average American school-aged child spends about 21 hours a week with television. Of that time, about 14 hours is actually spent looking at the screen.

Cumulatively then, the child spends one waking day a week paying attention to television. Over the course of an entire year, the typical child spends as much time paying attention to TV as he or she spends in formal studies at school. If even a small percentage of that time could be harnessed for positive education, then television could be an extremely important supplement to the education provided by schools.

One major question is whether television is indeed an appropriate vehicle for educating children, and the answer is yes. There has been an influential argument against using television for educational purposes. The claim is that, because television mesmerizes children, they become intellectually passive and mindless, absorbing little that is useful from television content. Time spent with television then is considered time wasted, no matter how good the TV program.

If this argument had any basis in reality, television would not be an appropriate medium for education. Based on my own and others' research, however, I can confidently say that the argument is wrong.

Television can be in fact an exceptionally effective tool for education. Contrary to opinions held by many, when children look at TV they are surprisingly mentally active. When they view together, children talk about the programs, try to guess how they will turn out, attempt to judge the reality of the portrayals, and so on.

Research has now shown that even at very young ages children attempt to comprehend the relationships between scenes and in general try to form a coherent understanding of the TV program.

Careful analyses show that children are not passively mesmerized by television's colors and movements and sounds. Their own comprehension is critical. They pay the most attention to television when they are able to understand it.

Not only do children try to understand TV, they learn from it. The evidence is growing, and we heard Aletha Huston just mention it, that they learn vocabulary from television, and it is clear that well-produced educational television indeed educates.

Young viewers want to learn from television. In fact, one of the most common reasons children give for watching TV is that they feel they learn things. The major question is whether we will give them content worth learning.

Television is an effective educational tool for several reasons. It provides a consistent focus for the child's sustained attention. The information can be carefully structured, sequenced and illustrated, so that the ideas are maximally comprehensible to the greatest

number of viewers. Television can present events, people's, and places that the child could never otherwise experience.

The large amount of time that children spend watching television gives us the opportunity to reach them with this wonderful educational tool. On the other hand, it is not easy or cheap to produce effective educational television. Good production is both art and applied science.

Since broadcast educational programs compete with other TV fare, productions must be entertaining to children as well as informative. To educate effectively, programs must also be targeted toward specific age groups and produced with an understanding of the knowledge and cognitive capabilities of those groups.

Research with the young audience, moreover, must be undertaken to provide constant feedback to the producers in order to ensure that the productions are truly effective. These special requirements make educational programs more expensive and more difficult to produce than entertainment television.

If we are to increase the amount of educational programming which is of high quality, there will have to be increases in public funding, as well as support for enhancing the state of art and state of science of educational TV production.

Without this funding and support, we will miss an extraordinary opportunity to enhance the quality of our children's experiences, education, and lives.

Senator INOUYE. Thank you very much, Dr. Anderson.

[The following information was subsequently received for the record:]

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April 24, 1989

Gina Keeney
Minority Counsel
Committee on Commerce, Science, and Transportation
U.S. Senate
Washington, D.C. 20510-6125

Dear Ms. Keeney:

This letter is in response to your query of April 19 concerning Senator Pressler's questions based on the April 12 hearing on children's television. I am not answering question 2 since I do not consider myself well informed about children's television in other countries.

1. Estimates of the amount of time children spend with TV vary considerably on who is measuring what for what purpose. Time spent with television, moreover, varies seasonally. Generally academic studies produce lower figures than commercial studies, especially those based on national ratings. On the whole, while American school-aged children spend an average of about 21 hours a week with television, there is considerable variability between children around this average. Some children spend upwards of 6 or 7 hours a day with TV, while others spend virtually no time with TV. Estimates of viewing time are additionally complicated by the fact that it is very common in many families for television to be "background", with no one in the family watching it for hours at a stretch. Our best estimate is that school-age children actually watch TV about two-thirds of the time they spend with television or about 14 hours a week; during the other time they play, read, eat, do homework, and the like. Again, this varies considerably from child to child.

The question as to whether children spend too much time with TV has to be answered with comparison to how they would otherwise spend their time if television was not available. Clearly, there exist more valuable ways for a child to spend time than watching entertainment television (which accounts for most viewing). The best evidence, however, suggests that, for most children, TV viewing time is not taken away from valuable intellectual activities. Rather, the tradeoff is primarily with other entertainment media, especially comic books, movies, and radio. Systematic studies of getting children to view less TV indicates that reading for entertainment goes up temporarily, but then goes back to preexisting levels, unless parents consistently promote reading.

The minority of children who consistently spend large amounts of time with television (4 or more hours a day), should be subjects of concern. Such children show some tendencies to perform less well in school, read less, and do more poorly on

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achievement tests. At this time, despite numerous attempts, research has not been able to show that television is the cause of these problems. It very well may be that large amounts of time spent with television is symptomatic of other problems, ranging from psychological difficulties of the child to dangerous streets affording few opportunities for safe outdoor play.

In and of itself, entertainment television is probably not harmful to children. It is apparent, however, that children learn social behaviors and attitudes from entertainment TV. If the programs repeatedly show violence and alcohol use associated with power and wealth, children learn those lessons. If glamour and recognition is associated only with athletic prowess but not with academic achievement, those lessons are learned, too. Consider entertainment television's usual treatment of sports figures as compared to scientists and the point should be clear. At its worst, television can promote violent behavior, devalue schooling, and glamorize alcohol and other drugs.

3. Parents can be important in encouraging the use of educational television, but many children watch educational TV for its own rewards. A key factor here is how well produced, attractive, and exciting the educational program is compared to the competition. Especially if the educational program is targeted at a specific subgroup of children, for example, 6 to 8-year-olds, the program has a good chance of being more attractive to that subgroup than the competing entertainment television which targets a broad audience. Parents can be particularly influential in making sure that the children get a chance to see the educational programs, especially in the face of competition for control of the TV by older siblings. Once children are familiar with a well produced educational series, they will make an effort to continue watching it.

I hope the Senator finds these answers helpful.

Sincerely,

Daniel R. Anderson
Professor

Senator INOUYE. Senator Exon.

Senator EXON. I would be glad to yield to the chairman.

The CHAIRMAN. Go right ahead.

OPENING STATEMENT BY SENATOR EXON

Senator EXON. Mr. Chairman, thank you very much.

And I want to thank the panel and the previous one that came this morning. This is a tremendously intriguing subject to me, because my wife and I have three children and eight grandchildren, and I must tell you that some of my education has come directly from my grandchildren alluding to some of the programs that you have.

One day I heard of Big Bird and I did not know what Big Bird was, and my grandchildren told me what that was. And then there was somebody called Greenjeans who was on a commercial television station that I find about. Then I heard about Cookie Monsters and all of these things, which it is a little unusual, I think, for very young grandchildren to be educating their supposedly half-educated grandparents.

It brings to mind, I think, how important all of this is. I was interested in the statistics that you indicated, the amount of time that especially very young children spend on television. And I sus-

pect that the lower the income level, the more time that they spend in front of the television screen, watching and learning.

Sometimes I wonder, from what I have seen, if the three major educational exposures of our very important kids today—first the parents, and then secondly the schools, and then obviously, with the advent of television, television—I sometimes wonder if they do not pay more time actually listening and absorbing education from television than they even do from their parents and our formal educational systems.

Therefore, the message that you are delivering us today in support of the chairman's bill is critically important.

I had a chance within the last 10 days to at our youngest daughter's home, where she has a sit-in babysitter, and the youngsters, 2, 4, and 6, were absorbed most of the time, when they were not bothering me in what I was over there trying to do, watching television. And with our very busy schedules, I think it was interesting to me to see what was going on there.

But my question has to do with what, if anything, should be done from the standpoint of legislation to enhance what I think you are trying to tell us. Being an intellectual, I only watch two things on television: number one, something with a ball in it, it has to have a ball in it or I do not watch it; and second, I watch the news. And to some extent I like to watch some of the arts, but mainly a ball.

And I think that probably I have with cable—there is hardly any time during the 24 hours a day that I cannot find something with a ball in it on those 68 channels.

But I was thinking the other day, there is very limited programming compared with what an intellectual like me watches, compared with those young people today.

Do you think, in addition to public broadcasting facilities, Sesame Street and the like, that there needs to be some kind of direction on the "limited" channel system that we have—and I put "limited" in quotes—for us to be doing something with regard to these limited channels to direct more of non-public broadcasting facilities, the commercials in particular, to help with the tremendous educational opportunities that we have through this media that captivates our youngsters?

Dr. HUSTON. Well, I guess I will respond. It seems to me that we need to be reaching out through a number of different avenues, and certainly if we put all the burden on public television we will not have the kind of impact that we could have if a variety of television outlets were broadcasting good programming for children.

I think another point that you raise is that there is a very limited time period during which children's programming is available. Oftentimes the stations broadcast, but they all do it at the same time when they do do it at all.

Senator EXON. But there is a lot of it on Saturday morning, is there not?

Dr. HUSTON. Right, yes; not too much of it that you would probably think was wonderful, either.

So yes, I think we certainly ought to be trying to reach children through other avenues, in addition to public television.

Dr. ANDERSON. If I could add to that, the most effective educational programming for children should be really targeted at a spe-

cific age group. For example, Sesame Street is targeted at primarily 3, 4, and 5-year-olds. When Sesame Street is being broadcast, there is very likely no educational programming for 6, 7, and 8-year-olds to watch, or for nine, ten, and eleven year olds, and so on.

If there was some incentive or stick for commercial broadcasters to provide educational programming, it is very likely then in the ideal case that a child of any age could tune in to educational programming appropriate to that age.

Senator EXON. A follow-up question: Does there need to be a requirement that schools utilize more educational television programming, as is the custom, as I understand it, in Japan?

Dr. HUSTON. I am not sure there needs to be a requirement. It seems to me that the value of educational television for schools will sell itself if the facilities are there.

The VCR is really making a big difference in that respect. As Dr. Hamburg pointed out, it allows the schools to use television flexibly, instead of being tied to a broadcast schedule.

But one of the things that the people who distribute instructional programming in our area talk about is sending trainers to help teachers learn how to use these media. It is just like any new curriculum materials, teachers need some guidance about how to integrate them into their curriculum and what things they can do with them. They need to be taught that they do not just turn it on and go down and have coffee while the kids watch it, but they may stop it and talk about it, replay it, do some things with it that can make it a much more active and important educational experience than it might be otherwise.

So I think there are a lot of incentives that one could provide to facilitate more educational television in schools.

Senator EXON. Under the cable proposition that we have now, we have educational channels I think in most places. I notice in Lincoln, Nebraska, my home, I see "educational channel" and usually I hit the educational channel and it says "This channel is reserved for educational," and that is all it is, is a sign on there.

It is a signal to me that we just do not have—if we have the type of programming that is available that we would like to have on there, it either is not being shown or there is not sufficient library of information that should be used.

With what our kids need today, not only kids but everyone else, it seems to me that there should be enough information with the VCR to have something on that channel most of the time, which I think is not the case in most instances.

Is that a legitimate criticism?

Dr. HAMBURG. I think so, and I would like to add something about the VCR, the Federal role of the VCR in education. I will give you two examples.

One has to do with the National Science Foundation. Its Science Education Directorate particularly is doing on a very small scale some intriguing things about VCR's in school districts, with a good library on science education and some teacher training to prepare the teachers, as Dr. Huston said, to be effective in dealing with it.

That is a program that could be greatly expanded. The whole Science Education Directorate of NSF could be greatly expanded in my judgment. I speak as the chairman of its Advisory Committee,

and I must say that I feel that there is tremendous opportunity there. And the VCR in science education is one piece of that. It is very tangible, about the concrete role of the Federal Government.

A second one is less tangible, but of immense potential significance, and that is the National Institutes of Health. The NIH has supported research that has led to the discovery, as I mentioned the Stanford University program in cardiovascular disease prevention and other work of that kind, University of Minnesota, work in Rhode Island, about what people can learn about how to take better care of themselves with respect to diet and activity and smoking and control of hypertension and so forth.

Now, there could be materials of very high quality, the greatest scientific integrity, and very interesting material, not only in the schools, but in community organizations, in doctors' waiting rooms, in dentists 'waiting rooms, and so on and so on.

I mean, we could really paper the country with high quality, interesting material about behavior and health under the auspices of the NIH. At the present time, if that exists at all it is on a very modest basis.

So those are two very strong agencies, the NSF and the NIH, that are clearly making some contribution in this field and could make much more in the years ahead.

Senator EXON. I thank the panel and I thank the chairman.

Senator INOUYE. We will take a short recess. We have just been called to the floor to vote. And if the panel will stick around, I have got a few questions also. We will recess for 5 minutes.

[Brief recess.]

Senator INOUYE. The hearing will please come to order. All of our witnesses this morning have referred to Reading Rainbow and Sesame Street and, as Dr. Huston pointed out, we are able to do this because there are so few children's programs.

All of you have suggested, and I believe correctly so, that television can be a very effective and positive instrument for good, that it could be a very effective educational tool. But yet, as Dr. Hamburg pointed out, it need not be a school for violence.

In other words, there is a potential for good, there is also a potential for evil and bad. And I would like to suggest that more time is spent on negative television than positive television as far as children's education is concerned.

And Dr. Anderson in his response to one of the questions said that we will have to either provide incentives or the stick. I think that is the word you used, stick. Apparently shows on violence, police, detectives, murder, and such attract greater attention and more commercial ads than Wuthering Heights.

How do we or can we provide the stick, considering the Constitution of the United States? Can we do something about our networks and tell them, you must set aside so much time for children's educational purposes, or should we? Dr. Anderson?

Dr. ANDERSON. My sense is that you both can and should. There was a bill passed here last year by both Houses, which was pocket vetoed by President Reagan, which provided for broadcasters—and I do not believe it affects cable, but for broadcasters—it required that a minimum percentage of time be directed at educational and informative programming.

Assuming that that is constitutional, and I suspect both houses would not have passed it if they thought it was unconstitutional, it seems to me that that is the least that can be done.

If there is such a requirement on broadcasters, then in fact they are going to have to be looking for educational material. Again, there is the incentive issue. That would be the stick or one possible version of the stick. Incentive issues is a problem.

Good educational programming is expensive, and broadcasters—one reason we have a really low quality children's television right now is, using inexpensive animation techniques and not using live actors who get residuals and so on, you can produce commercial low-quality entertainment television that children will watch if that is what is there very cheaply.

However, it would appear to me that with Federal support, if at least the initial production costs of quality educational programming were there and it were made available at competitive costs to broadcasters, that they would probably be perfectly happy to meet some of their obligations to the larger society by using those programs.

Dr. HAMBURG. I would like to add to that if I may. I agree with what Dr. Anderson has said. I think the important thing is that this committee is re-opening the discussion and national awareness that it is okay, it is thinkable, about how the educational potential of television can be fulfilled, including a significant Federal role.

There are lots of possibilities. For a while Senator Wirth was advocating something done in many other democratic countries, requiring commercial television to produce a certain number of hours, have on the air a certain number of hours per week, children's informative programs.

Senator Heinz has proposed tax incentives for corporations to give money to public broadcasting. The idea that you touched on, Mr. Chairman, of a separate and distinct fund for children's television is a very attractive one. Such a fund might grow best in the long run by requiring matching funds of some kind from the private sector, both profit and non-profit private sector.

There are a variety of ways, it seems to me, that we can increase the amount of really worthwhile educational programming for children, and for that matter for adults. It is very important to get kind of a lively national discussion and a lot of analytical work, serious analytical work, on the pros and cons of different approaches for that, at least to make it a speakable subject again.

I want to add one possibility to that, two actually, one of which is in my testimony briefly and one is not. If you assume, as I do, that we will have to be living for a long time, maybe as long as there is an industry, we will have to live with a lot of sex and a lot of violence and a lot of alcohol and so on on commercial television, the issue of how much is too much gets into the questions of censorship and government domination, to which I am very sensitive and I am sure you are as well.

And yet, it ought not to be unspeakable. It seems to me we need a really effective ongoing long-term, high level, high quality, high visibility forum, a forum for discussion of the television industry, including importantly the implications for education of emerging technologies. Let us call it a Council on Education and Television.

I do not think that ought to be a government-run or even fully government-supported activity. I think we ought to give consideration in the future to some jointly private-Federal establishment of such a council, with people like yourselves as members, as well as prominent businessmen and scientists and educators and so on.

Maybe such a council ought to put out an annual report of the highest quality about the current state of education and telecommunication. Certainly it could do convening functions for consensus building, for common understanding of the problems—a forum for constructive criticism in a democratic vein that would include the sex and the violence and the drugs and all that, in addition to different approaches to educational programming for children, advertising, entertainment, news, the whole gamut.

What would be a legitimate sponsor for such a forum? Maybe the National Academy of Sciences, maybe the National Academy of Education. One can think of various organizations, maybe a group of universities. One would need some independent base, nongovernmental.

Now, you could say to me that I as a foundation president, we could set up such a council tomorrow and, particularly with Carnegie's history in this field, we could. We would have a certain standing, and maybe we should.

My impulse is I would be reluctant to do it without a Federal participation in some way, not so much as a matter of the dollars, but as a matter of the statement of the interest and concern of the Federal government in these matters. Maybe that is wrong.

But in any event, such a council deserves consideration. I am not aware that we really have that kind of inter-sectoral leadership body to critique and help to fulfil the potential of television for education.

The other point has to do with the critical viewing skills as part of the national concern to develop critical thinking skills, problem-solving skills because, as you heard about it this morning, it absolutely runs through the educational reform efforts of this decade and particularly the science education efforts.

I cannot for the life of me see why critical viewing skills, critical listening skills, should not be a part of that, should not be taught. And one way to move that ahead would be for the Congress to ask, as in so many cases, the National Research Council to do a study of this matter.

You referred this morning and Dr. Hill referred to NRC studies that have been useful in education. It seems to me it would be sensible to ask, what is the present state of that, what do we know about it, about the concepts, about the techniques? How does it relate to higher order thinking skills?

If we are going to live with a lot of marginal and even, frankly, bad stuff on the tube for decades and decades to come, can we cope with it more effectively, can our young people learn how to critique it and analyze it and to, say, to distinguish fantasy from reality, to distinguish an ad from a program?

There is a great deal that I think usefully could be taught in that context, and that is not being done. And that would be appropriate, it seems to me, for a stimulus from the Federal Government to consider that field more seriously.

Thank you, Mr. Chairman.

Senator INOUYE. Dr. Huston, assuming that sufficient funds are raised so that we can increase the number of children's television, educational television, should there be an agency, government or non-government, that can officially rate these programs?

Now, for example, movies are rated R, X, PG, PG-13, A. Should a council or an organization be established to rate children's shows three to five, or three stars, two stars, one star, to provide guidance?

I know this is skirting on censorship, but you can have children's shows and children's shows. I would presume that all these people who produce these cartoons would say that is a children's show, no matter how violent it may be.

Dr. HUSTON. Well, I think when you use the word "rating" of course, it immediately conjures up some judgment about good or bad, and then you get into a lot of questions of whose judgment and how do we decide that. There are even questions about what we might consider the sorts of "pro-social values" that we might teach our children. Not everybody agrees on those.

But it clearly would be possible and important to have information about things like the target age group, the goals of the program. One of the distinguishing features between educational programs and entertainment, those that are purely entertainment—we hope they are all entertaining—is the fact that the former have a set of goals. They are based on some sort of a plan that says, here are the messages we would like to transmit.

Such goals can be made public so that the users, whether they are in-school users or at-home users, can know what objectives the producers have. There certainly are a lot of catalogues. There is a lot of in-school educational material available, and those are catalogued by topic and the like.

So I am not sure what the best mechanism would be for doing that, but I think we certainly could have ways of informing parents and teachers.

The CHAIRMAN. If the chairman would yield. What do the British do? I know they require, what is it, three and a half hours of informational, two and a half hours of instructional, children's instructional?

Dr. HUSTON. I believe that is correct.

The CHAIRMAN. Do they rate them or not?

Dr. HUSTON. I do not know. Does anybody else know?

[No response.]

Dr. HUSTON. They have a longstanding tradition in the BBC of producing good programming for children. The BBC, of course, has been a much stronger system than our public broadcasting system. But I do not know about their rating system.

Dr. HAMBURG. May I add to that very briefly. It seems to me that Senator Hollings' question raises something very important, and that is—and again there might be a Federal role. I mean, the Congress could ask the Department of Education or some other appropriate body, the OTA maybe, to make systematic international comparisons about what various countries do.

Japan, the U.K., Sweden, West Germany, Australia, Canada, Mexico come to mind as countries that are all doing really interest-

ing things, to my limited knowledge. Why not have a study that pins it all down, what they do in different democracies?

Senator INOUYE. Dr. Anderson.

Dr. ANDERSON. I would like to add to that briefly also. You raised what is in fact the single most common question I get asked about children's television, which is which programs are good for kids?

And my general answer is to try to evade the question, with the exception I say that public broadcasting programs I can generally endorse because they are produced with the intention of benefiting their child audiences. However, I just simply do not have the time to watch all the children's programs that are available in all the different sources. Plus, seeing one sample of one program does not necessarily tell me about the series.

What you are asking about would require a really organized effort with a staff of people, with criteria, who really systematically monitor what is available to American children and, if not rate, at least provide a report as to what the programming is.

Senator INOUYE. The Subcommittee on Communications of this committee has been privileged to have two outstanding chairmen. A long time ago we had a man from Rhode Island, John Pastore; then more recently, Ernest Hollings. And I have the privilege of succeeding Senator Hollings.

His State of South Carolina, as Dr. Hamburg pointed out, is in the forefront of children's educational programs. And so it gives me great privilege and great honor to call upon my chairman, Senator Hollings.

OPENING STATEMENT BY THE CHAIRMAN

The CHAIRMAN. Well, I am telling you right now, I got introduced.

You are mighty kind, Mr. Chairman.

It is a sort of deja vu feel, because you as the experts have outlined the tremendous value. We had that back in the fifties at my home state, instituting over 30 years ago our educational television.

It was mostly for education. I never heard of public television until I got up here. I always talked about educational TV.

And to the credit of the system down there, the program and station managers awarded Mr. Henry Carson, the director of that effort now in South Carolina, the Managers award. When your colleagues, your conferees, select you as outstanding, that is quite a compliment. So we do appreciate it.

I appreciate particularly what Senator Inouye is doing, his leadership here. And Mr. Chairman, I can see right now a very valuable Inouye study on children's television. We can get the money. If you can get it, we will get the staff, and we will use these folks and others, the Carnegie Fund that has worked in this particular area, and conjunctively—otherwise, you are going to study for 2 or 3 years; the world has passed by.

I would like to get an Inouye study launched immediately just to find out, because they do have 3½ hours of informative children's television in Great Britain and 2½ hours each day of instructional, and it has worked extremely well.

We have seen it at the higher education level. We were playing catch-up ball and still with you folks up in Massachusetts, and we put the best of doctors for medical to educate our nurses and everything else in health care, nutrition, and what have you. The day care instruction right now goes out over our educational channel.

But we find now that we have fallen way behind everyone. By the year 2000 the GNP, the production, of the Pacific Rim countries will exceed that of the United States and Europe combined. And we find in great measure, I am sure as has already been attested, that industry is having to give remedial reading because the folks just cannot understand the instructions and what have you.

With this, rather than running around, finding the fault and the blame, how to correct is what we are interested in in this committee. And I am convinced Senator Inouye's initiative here for a children's endowment for educational television is on track.

I want to follow his leadership and see if we cannot really put it in, because if we can get the real good programs—it is just like me in the evening, I cannot, and I am confident nobody in this room hardly listens to little children talking like old folks and old folks talking like children. That is what is going on every night at 8 o'clock.

The CHAIRMAN. So I have to go to the science, I have to go to CSPN. Thank heavens for McNeil-Lehr and the other programs like it.

And see if we cannot find something that is really both entertaining and instructive, and that is why it would have to be for the children. You cannot ram it down their throats, but it can be done. And it is being done the world around, but not here.

I congratulate you, and I appreciate the panel giving the expertise that sort of backstops our political findings here in this particular committee.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

It is almost embarrassing submitting this bill. It calls for an appropriation of $10 million. At the same time, as some are aware, we spend over half a billion in the Defense Department for teaching aids and training films, and in the business community they spend over a billion dollars in teaching aids for midlevel executives and higher.

And we are going to be spending, if we are successful, $10 million more. Well, but this is hopefully the first positive step, and it will be the first of many other steps.

So I thank all of you very much.

Our final panel is made up of: Mr. David Britt, President and Chief Operating Officer of Children's Television Workshop of New York; a very distinguished actor, Mr. LeVar Burton, who is the host of Reading Rainbow, of New York; and Dr. Edward Palmer, author, Television and America's Children: A Crisis of Neglect, of Philadelphia.

[Big Bird enters the room.]

Senator INOUYE. Now we have our most distinguished witness.

Mr. Britt, if I may call upon you first.

STATEMENT OF DAVID BRITT, PRESIDENT AND CHIEF OPERATING OFFICER, CHILDREN'S TELEVISION WORKSHOP

Mr. BRITT. Mr. Chairman, we are only following our own work here in television. First you have to get their attention, and my friend here Big Bird teaches in America's largest educational institution in fact, called Sesame Street. He has a sore throat today, so I am going to have to talk for him.

Every evening more than 12 million Americans use television to learn about the events of the day and to form opinions about them. But too many of these Americans never think of using television to educate their children. That is a shame, because television is a powerful educational tool and it is really sadly underused in this country, as everyone has said already today.

I want to talk very briefly about what we have done in educational television, what we might do, and one way of broadening the scope of educational television that I think will be of interest to the subcommittee.

As you have pointed out, sir, children are America's poorest and neediest citizens. One of the things they need most is better education, education that will help them thrive in our increasingly technological society. Our children are this country's future. If we lose them to ignorance, our edge in science and industry will pass to more innovative societies and their lives will be lost to a better future.

Educational television works. It reaches children, whether rich or poor, white or of color. Every day the shows we have heard about this morning—Sesame Street, Reading Rainbow, Mr. Rogers' Neighborhood, 3-2-1 Contact, Square One TV, the wonderful shows on South Carolina educational television—provide millions of children with extra chances to learn and grow, most of them outside the formal classroom structure.

And they do learn. You have heard the evidence this morning and it is overwhelming.

A final, crucial point about educational television. It is very cost-effective. A nationally broadcast series that draws a large audience costs literally pennies per program per viewer, far cheaper than almost any other educational innovation.

The fact is that much more could be done. At CTW, for example, we are about to launch a proposal to do what Dr. Pearson suggested earlier today, namely a television-based literacy project to help children aged six to nine, the graduates of Sesame Street, learn advanced writing and reading comprehension skills. And we have preliminary plans for programming on geography, on history, civics, the arts, health education, and other subjects.

The fact is that under present circumstances most of these ideas will remain in our desks. Today only public television is dedicated to using educational programming to reach children. But public television has other priorities, as well, and has neither the resources nor the broadcast time to alone sustain educational programming against the increasing flood of mindless entertainment on other channels.

The competitive realities of commercial television cannot and will not bring more educational TV to children. Whatever the ben-

efits and costs of deregulation, it does not serve the needs of children.

What can be done? Well, this society has long recognized that children need special protection, ranging from child labor laws to anti-pornography regulations to compulsory education itself. Let us make educational programming part of that special protection.

A way to start is along the lines that you are already thinking, sir, to create at the Federal level an independent center for national educational programming for children, charged with providing funding, leadership and advocacy, a kind of National Science Foundation for children's television.

Such a foundation should not supplant other funding sources. All the present funders and more need to continue and to increase their support. But I think that the National Children's Television Foundation should have four major tasks:

First is funding to develop, produce, and sustain new national educational television projects on PBS and indeed on cable and commercial channels, whoever will put them on the air;

Second, the foundation should build a national research base on the effects of children's educational television, the kinds of things that you were talking about just a few minutes ago. It should also identify needs and opportunities for the use of VCR's and other things in day care and in after-school programs.

Third, it should advocate the use of educational television to other government agencies, to private foundations, states, corporations, and commercial communications entities.

Finally and perhaps I think most important, the foundation should report to Congress regularly on the state of educational television for children and recommend changes needed to speed progress.

There is today no single agency carrying out these four tasks, but each one is essential if we want to use television in the service of children's education.

Let me leave you with one last thought. Today there are 40 million graduates of Sesame Street. Over the period 1968 to 1982, the Federal government contributed about $30 million to that series. That is a Federal tuition bill of about 75 cents per graduate.

With more resources and more broadcast time, we could provide a lot more low-cost and effective education for our children. I cannot think of anything more important and I do not think that Big Bird can either.

Thank you on behalf of both of us.

[The following information was subsequently received for the record:]

Children's Television Workshop

One Lincoln Plaza / New York, N.Y. 10023 / 212 595-3456

DAVID V. B. BRITT
PRESIDENT
CHIEF OPERATING OFFICER

May 1, 1989

Gina Keeney, Esq.
Minority Counsel
Hon. Larry Pressler
United States Senate
Committee on Commerce, Science,
and Transportation
Washington, D.C. 20510-6125

Dear Ms. Keeney:

As you requested, here are my responses to Senator Pressler's three questions about educational children's television.

1. The general assumption is that children spend too much time watching television. Is this true? Is non-educational television harmful in itself, or is it only harmful in that it takes time away from more educational pursuits?

We know that children watch a great deal of television--roughly 25 hours a week, more time than they spend doing anything else except sleeping. In my view, that is much more than they should watch--television in that quantity becomes a theft of time better spent in play or other activities.

Nevertheless, studies have failed to establish that watching television for that amount of time has adverse effects on children's intellectual development. The evidence is that children do not sit mesmerized in front of a television set; they may talk, play, or even do homework while their favorite programs are on. (There is evidence that viewing television for great amounts of time each week is associated with a variety of educational and social difficulties. Such research does not indicate clearly whether TV viewing is the cause of these problems.)

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Research also tells us that significant amounts of television viewing do not replace time children previously spent reading books, or actively learning in other ways. Rather, it supplants listening to the radio, reading comic books, or playing organized sports. As for the possibly harmful effects of non-educational programming, I am certainly concerned about televised violence and other anti-social activities so frequently presented in non-educational television. Although researchers disagree about the extent of harmful effects, the majority concur that viewing violence is not good for youngsters.

We also have some evidence that children absorb and remember powerful lessons about social behavior from television. Hence, non-educational programs that teach them inappropriate social or sex-role behavior may be harmful. In any case, I prefer to think of 25 hours a week of non-educational television as an overdose of snack food--too many empty calories. Why limit our children's television diet to such snacks? We should provide them with alternative viewing choices that will nourish them in school and in their society--and by extension, will improve their country's standing in the world.

2. How does the United States rank in terms of the quantity and quality of children's educational television that is available?

It is difficult to compare the quality of American educational programming with other countries' offerings on a program-by-program basis. We do know that SESAME STREET is seen in 72 countries, and 3-2-1 CONTACT and SQUARE ONE TV in more than 20 countries. This suggests that these educational programs, at least, are regarded highly enough in other countries to be given substantial air time.

We certainly can compare the emphasis and commitment accorded children's educational television here and abroad. None of America's three major television networks carries a daily educational program for children. In the United States, such programming is limited to public television, which is inconsistently funded and therefore relies heavily on repeat broadcasting. By contrast, in some other countries, a department devoted to children's educational television is consistently funded to create new programming year after year.

Thus, public television in Australia, and public and commercial broadcasters in Japan, Great Britain, Sweden, and Canada, are able to produce more educational programming more frequently than we are.

In fact, in terms of quantity, we are low on the list. In recent years, the number of hours devoted to educational children's programs has steadily declined on American public television. Today such programs constitute 11 percent of public broadcast time, one hour and 46 minutes per day per broadcaster.

While American public television produces about 87 hours of new educational programming for children every year, British public television produces about 590 hours--roughly six British hours to every American one. As for Britain's commercial stations, they broadcast 700 hours of children's programming annually--13 percent of total commercial airtime. They produce 493 new hours every year. Not all of these programs are educational, but many are. In addition, commercial broadcasters are obliged to provide six and a half hours per week of programming for use in schools.

In Japan, where public television enjoys more support than in any other country, children in school can see 33 and a half hours of educational broadcasting every week, covering all subjects and all grade levels. And after reforms initiated by the Australian government ten years ago, that country's broadcasters, which are mostly commercial, are obliged to provide a daily hour and a half of children's educational programming.

3. Isn't parental encouragement the primary factor in getting children to watch educational television, just as it is the primary factor in getting children to do their homework? Or is television an independent force?

Certainly parental encouragement is important in getting children to watch educational television--when they are very young. Moreover, studies of SESAME STREET and other series indicate that when parents watch the series with their children, the children learn more. This is really an additional benefit, since we know that children learn from educational television whether or not parents are present.

Parents' ability to impose their viewing preferences steadily erodes as children grow older. Parental influence has definitely decreased by age eight, if not sooner. And the growing number of latchkey children means that more and more youngsters are choosing on their own what programs they watch. Ultimately, educational television simply must appeal to children for reasons other than parental approval--or it will attract only a captive audience. We do know that if educational programming is properly designed, it does appeal to children. In short, educational television can be an independent force.

I hope that these answers are helpful. If you need any further information, please do not hesitate to get in touch with me.

Sincerely,

David V.B. Britt
President-Chief Operating Officer

Senator INOUYE. Thank you very much, Mr. Britt.
May I call upon Mr. Burton.

STATEMENT OF LeVAR BURTON, HOST, READING RAINBOW, LANCIT MEDIA

Mr. BURTON. Good morning, Chairman Hollings, Senator Inouye. It is my extreme and joyous pleasure to be here and I thank you for your invitation.

When I first walked into the hearing room this morning, Senator, you were speaking of illiteracy and the rampant problem we have with functional illiterates being graduated every year from our high schools and colleges in this country.

I make a living in television and have experienced the impact that television potentially has in our lives. It is in my opinion probably the most powerful tool we have available to us in terms of being able to change the world. Children and children's education as it relates to television is a subject that I am absolutely passionate about.

I have benefited enormously from a good education in this country, and in fact my mother was an English teacher and so when I was a kid we read in our household. It was a normal activity for us. Not only did we read as children, but our mother read in front of us, and so we got the example that reading is something normal for human beings to do.

There is great debate, I think, raging in the educational community that television is the enemy, and I disagree. I think that television has the potential to be such a powerful tool for educating our children. And it has been said before and it will be said after I say it now: Our children are our most valuable resource, probably the most valuable resource that we possess.

We can make no better investment in our future than investing in the minds of our children.

Children's television, educational television, has reached a point, I think, where there is another step that needs to be taken. I have the great good fortune to host a children's television show and have for 7 years, and the response that I get from kids on the street is remarkable. These kids watch TV and they watch it in droves, and they watch it with a very discerning eye.

They are intelligent television viewers. They know when they are being pandered to, they know when they are being condescended to, they know when they are being lied to, and they know when they are being jerked around.

And they communicate to me that when they are being treated like people is when they enjoy watching television more than anything else. And I think we make a supreme and conscious effort on Reading Rainbow to address children as equals, as intelligent human beings.

My attitude on the show towards them is as the big brother, sort of pied piper. I consider them my co-conspirators in the endeavor of exploring the joys of reading.

My point, though, this morning, Senators, is this: In this nation we have a responsibility to ourselves and to our future, I believe, to

raise the quality of life of our citizenry, and a good and solid education is an important part of that.

Being able to read is probably the single greatest gift I think we can give to each other as people in this world. The ability to pick up a book and to read its contents is such a freeing experience; it is the key to self-esteem, it is a key to being able to compete in this world on an equal footing with others.

And we live in a highly competitive, outcome-oriented society. I think it is important that we place a little more value on the process at this time. And that is the step we can take here, paying a little bit more attention to the process at hand.

If a man cannot read, it is very difficult for him to dream with any sort of reality attached to those dreams. And by giving our children the facility to read, a child who begins to develop a love for reading at the age of 6 will be a reader at the age of 60 and thereby improve and increase the quality of that person's life for their entire life. I just feel so strongly that reading and the ability to read, the ability to be literate, is such an essential part of what it means to be a human being in this life.

I encourage you, Senator, please submit your $10 million bill. And yes, it may seem like a paltry sum, and yet and still, without that $10 million shows like Reading Rainbow would not be on the air, we would not have this opportunity to influence and enhance the quality of lives that we do, that we have an opportunity to do.

So yes, submit this bill and encourage your colleagues to support your bill, and submit other bills. And $10 million, yes, can be a start, and maybe next year it can be more, and more and more still in future years.

There is, as I say, no better way we can invest our time, our energy, or our money.

[The statement follows:]

STATEMENT OF LEVAR BURTON, READING RAINBOW, LANCIT MEDIA PRODUCTIONS, LTD.

Thank you, Mr. Chairman and members of this Subcommittee for allowing me this opportunity to speak with you about children and television and about my experiences with the very special children's television series READING RAINBOW. READING RAINBOW is a very important part of what public television presents to children's audiences in this country and I am very proud to be a part of it.

Educational programming for children has a natural home on public television. From Seasame Street, 3-2-1 Contact, and Square One TV to READING RAINBOW, WonderWorks, to the newest offerings Long Ago and Far Away and Shining Time Station, public television continues to make good on its commitment to America's children.

In classrooms across the country, teachers are using instructional programming on public television to supplement their lesson plans. These programs in almost all subjects and disciplines are viewed by millions of students every week.

The funders of these children's television programs -- public television stations, the Corporation for Public Broadcasting, government agencies like the National Science Foundation, the National Endowments for the Arts and Humanities, the Department of Education, and businesses like The Kellogg Company, DuPont, Sears-Roebuck, IBM and others -- deserve a lot of credit for recognizing the importance of these programs to American children.

Additional funding from all sources will help secure the place of these programs and others like them in public television's future. The continued strong commitment of this Subcommittee to public broadcasting will go a long way toward fulfilling the missions of public television.

It is important to note public television's commitment generally to education, and specifically to eradicating illiteracy. Public television stations across the country participate in special outreach programs like Project PLUS that promote reading, develop local task forces in their communities to confront the issue head-on, recruit volunteers for tutoring programs, and inform non-readers of the availability of assistance.

This is just part of the story of public television's involvement with reading -- another part, and the part with which I am most familiar, has been the development and production of READING RAINBOW.

When the Reading Rainbow producers, Great Plains National/Nebraska Educational Television Network and WNED-TV approached me in 1981 to host the series I was honored... (LeVar's own words regarding why he became associated with the project, his love for reading -- his mother was an English teacher, etc.)

READING RAINBOW debuted on July 8, 1983 with a program concept that has been maintained throughout the years. Targeted for 5-to-8-year-olds, READING RAINBOW stresses that reading is an exciting way to open up new worlds of learning and imagination. Employing a central theme drawn from the feature book, each program includes a video adaptation of the

feature book using the book's actual illustrations. Expanding upon the feature book theme, "you are there" adventures motivate youngsters to make reading a part of their everyday lives. Excitement about reading is reinforced by the book reviews -- three additional books enthusiastically reviewed by children the age of the viewers.

READING RAINBOW evolved out of a growing concern about the nation's literacy problem. We wanted to use TV to help attack the literacy problem right at its roots, with children. READING RAINBOW was created as a program that motivates children who are beginning readers to choose to read for pleasure and entertainment -- and to bridge the gap between TV, education and motivation. Motivating children to read is exactly what READING RAINBOW has done successfully in all of its seven years.

The overwhelming requests from librarians and teachers for READING RAINBOW books attest to the powerful influence the program has on children's attitudes toward reading. In fact, according to a study conducted by RMC Research of New Hampshire, 93 percent of librarians surveyed said they have expanded their collection of READING RAINBOW books to meet increased demand from children. Nearly as many librarians credit the show with stimulating children's interest in reading more books.

Librarians also reported observing children recommending books to other children, children discussing books or program topics, an increase in overall reading or summer reading, and increased interest by previously unmotivated children.

A direct measure of READING RAINBOW's impact can be seen in the finding that 82-percent of the librarians say that children ask for books they saw on the program with 68-percent saying they request the books by title. One half say parents request books based on the series.

Our program research indicates that TV is an extremely effective and powerful educational tool. For example, a number of READING RAINBOW programs focus on science and in our research of a recent science-oriented show children understood and could explain the concepts of camouflage, life-cycle transformation of insects and the role of an entomologist within the context of the program. Children's desire to find out more about insects and to observe them more closely achieves the series objectives of stimulating inquiry and exploration. This is after only a one-time viewing of a single 30 minute program.

READING RAINBOW is meeting its goals of motivating young children to seek good books, go to their local libraries for READING RAINBOW selections and become <u>genuinely</u> interested in learning.

In conclusion, let me just say how pleased I am that this Subcommittee is looking at the educational needs of our country's children and how they are being met, or in some cases, <u>not</u> met by children's programming. I am doubly pleased and honored that you asked me here to tell you how important READING RAINBOW is in encouraging our nation's children to read, to visit libraries, and purely to learn.

Thank you for your time, and I'd be happy to answer any questions you might have.

Senator INOUYE. Thank you very much, Mr. Burton.
Dr. Palmer.

STATEMENT OF DR. EDWARD PALMER, AUTHOR, "TELEVISION AND AMERICA'S CHILDREN: A CRISIS OF NEGLECT"

Dr. PALMER. Yes, thank you.

Senator Inouye, you earlier made reference to the fairly limited gallery here today at the journalists' table and pointed out that there are not too many people standing in the standing room only part of the room. Senator, it is because the children are not here.

The children are 42 million strong. We are talking about 42 million children in this country between 2 and 13 years of age, and we are talking here about an activity, this viewing of television, which these children engage in for great numbers of hours, and we are talking about a lot of wasted time.

In Japan they do not waste children's time that way. Their youngsters go to school 5½ days each week, and after school most Japanese children up to exam year take a couple of extra hours a night of something they call jukyu, which is private tutoring, to further their educational progress.

If we could make available to the children of America 260 hours a year—that is an hour each weekday—of well-planned, well-produced television programming, and if we could do that, further, over twelve years of their growing and maturing lives, we could provide an amount of learning time equal to 2 years spent in school.

My book, "Television and America's Children: A Crisis of Neglect," documents television's extraordinary cost efficiency as a means to educate youngsters. In a recent year, the total expenditure on children in the elementary grades, per child, was $22.42 per day.

If we would increase this expenditure by less than 1 cent per child, or to $22.43 a day from $22.42, we could pay for a full offering of out of school educational programs for children. This is very much within our reach.

And certainly the schools are asked to do more than they can accomplish. It is a more complicated world than it ever has been.

We produce some of the world's finest out of school educational programs. Yet we lag behind other countries both in the current volume of output and in providing adequate and dependable financing for programs of this type.

I have traveled in the last decade to many other countries to study their television offerings for children, and I would like to report here some of what I have found in Japan and Britain and Australia. These three countries are interesting in their variations in culture, location, and size.

And all three surpass us in important respects in enlisting television to provide children with supplemental instruction in school-related subjects at home.

Japan is interesting. With a population only half as large as ours, the Japanese have what is perhaps the best-funded system of public television in the world. Japanese children also are served well by television in the schools.

When we look at television for children in any realm, for example out of school children's television, we have to look at the total learning experience of children. I think we have to look at what the schools are providing. I think we have to look at what commercial television is or is not providing. We have to look at what is made available for children on videotape.

The fact is that children in these other countries are getting more from all of these sources than are children in the United States.

There is a reason for that. In 1985 our per capita expenditure on public television in this country was $4.85, $4.85 for every man, woman, and child in our population. The comparable expenditure in Britain was $16.14 per capita, and in Japan $11.83.

My book points out that in the 1985 broadcast season, which was a reasonably typical recent year, the BBC carried 590 hours of newly produced out of school TV programs for youngsters. The comparable figure for U.S. public television was 87½ newly produced hours that year.

But even more interesting is what the British commercial stations provide for children. Commercial television came after public television in Britain and was created in the mirror image of public television. As a result, the commercial stations provide 3 hours 31 minutes per week in the category of children's information programs, representing 3½ percent of the weekly program offering. They also provide 2 hours 32 minutes per week of pre-school education programs.

On the commercial channels, this is, and the commercial channels provide school programs even. And they do this in return for the privilege of using the public's air waves to advertise.

If we count both out of school and in-school children's programs on the British commercial stations, they transmit 1,060 hours a year, and this constitutes 19½ percent of their total transmission time.

The Australians until a few years ago had no regulation over commercial television, and then they held hearings. They held hearings on whether or not the commercial stations should be allowed to regulate themselves, and the result of those hearings is that the stations were denied self-regulation and a children's program category became an obligation.

For children 6 to 13 years of age, the commercial stations must produce 87 hours of new programming each year. They have to broadcast 1 hour a day every weekday, and 87 hours of that has to be new. For pre-schoolers, they have to produce another 87 half hours of new material and they have to broadcast a half-hour a day.

I think the only remedy for our deficiency as we compare ourselves with these other countries is a combination of remedies which includes regulated reforms on the commercial side. Let them provide part of these informational and educational programs for children.

And I do not think we necessarily have to set up a committee to do that, Senator. I think if we require that they produce educational and informational programming, we can then take a look and see what they do with that requirement.

I think we need to make a special exception for children. They are not here today because they are not a lobby. There is not programming on commercial television because they are not a market.

And if we are not willing to make a special exception, the programming will never be there. On the commercial side, a special exception would mean setting aside somehow this question about the First Amendment, about which we all care a great deal, and saying, if the commercial stations have to put up 1 hour a day for children, this is a special exception for children as an unfranchised class, a special class of individuals, and not a precedent for other viewer categories.

Possibly there is an avenue there through this special exception. But we also have to make a special exception on public television. I cited the public television expenditure in this country compared with other countries. The fact is that if children receive an equitable share of public television's poverty, that is still poverty for our children on public television.

They have to receive a special exception on public television also, and they have to be treated again as a special class of persons. And the only way public television will let that happen is if we can somehow make it clear that that is not a precedent for other audiences.

Thank you very much.

[The statement and questions and answers follow:]

STATEMENT OF EDWARD L. PALMER, PH.D

I am here to make an appeal on behalf of a constituency that is 42 million in number. They are America's children between two and thirteen years of age. If we could find a way to provide these children with one hour of informational and educational television programming for out-of-school viewing each weekday, the result would be a learning opportunity of 260 hours each year. If this offering of an hour each weekday were available constantly throughout twelve of a child's maturing years, it would constitute an amount of television learning time equal to two years spent in school.

My book, Television and America's Children: A Crisis of Neglect, documents television's extraordinary cost-efficiency as a means to educate youngsters. For example, in the 1986-87 school year our daily education expenditure for each child in grades one through twelve was $22.42. We would need to increase this expenditure by less than one cent per child, to $22.43 per day, to pay for a full offering of out-of-school educational programs. This amount would provide sufficient programs to serve three different age groups: 2-5 year olds, 6-9 year olds, and 10-13 year olds. And this narrow age-targeting in children's educational programs is important because so much of learning builds sequentially.

In a time when the schools are asked to do more than they can accomplish, and when the upcoming generation must provide our productive workforce, maintain our competitive posture in the world, and help to support the rapidly-increasing proportion of elderly in our population, it is in the national interest--and not just in the interest of children--to take advantage of television as an out-of-school educator.

Although children spend a great deal of time watching television, we do little to ensure that the programs available for them to see include ones that expand their horizons by sparking new interests, or by exposing them to useful new ideas and perspectives. I maintain that when all factors are considered, it is economically irresponsible that we fail to use television fully and well to help meet nationwide educational needs and remedy our widely acknowledged educational deficiencies in all key school subjects. We have produced some of the world's finest out-of-school educational programs, yet we lag behind many other countries both in current volume of output and in providing adequate and dependable financing for productions of this type.

I have travelled in the past decade to many other countries to study their television offerings for children, and wish to report on what I found in Japan, Britain, and Australia. These three countries exhibit interesting variations in culture, location, and size. And all three surpass us in important respects in enlisting television to provide children with supplemental instruction in school-related subjects at home. Where I refer below to the amounts of in-school educational television available in these countries,

the point will be to help establish the context within which out-of-school educational programs are offered.

Japan is interesting: with a population only half as large as ours, the Japanese have what is perhaps the best-funded system of public television in the world. They support two public channels, nationwide, and on these channels, children receive an equitable share of fresh new programs for at-home viewing each year. The producers who create these programs function under an incentive system which rewards efforts to serve young people's real social, emotional, and intellectual needs. Programs geared to children are scheduled every day of the week throughout the year in time slots that are appropriate and convenient for child viewing.

Japan also has four nationwide commercial channels, plus a fifth commercial channel in the Tokyo area. All of these offer programs for children, mainly of the light entertainment variety. Many Japanese educators say their children have a special need for light entertainment as a diversion from severe pressure to perform well in school. They say that this consideration and the fine performance of Japanese public television combine to explain why they have never felt a need to impose a required minimum of at-home educational programs on Japan's commercial licensees. Japanese children attend school five and an half days a week, and most, in addition, recieve at least two hours every weekday of after-school tutoring, known as jukyu, to prepare them for rigorous national examinations.

Japanese children are also served well by television in the schools. By 1983 in Japan 22,500 primary schools, representing 90 percent of all Japanese primary schools, made some use of programs provided by their public broadcasting organization, the NHK. The NHK provided 122 programs each week (including fifty-seven rebroadcasts) for a weekly total of 33 hours and 30 minutes. These programs covered all basic subjects and all grade levels. Color television sets were found in 99.7 percent of Japanese primary schools, 88 percent of which had a color television set in every classroom.

Britain, like Japan, established public television with substantial and dependable funding well before allowing commercial television to develop. The result is that children in both of these countries receive greater benefits from public television than do U.S. children. Two factors account for the discrepancy. One is that public television receives greater per capita support in Britain and Japan. The other is that television is efficiently centralized in those countries whereas it is cumbersomely localized in the U.S. My book presents figures for 1985 which show that at that time, where we spent $4.58 per capita from all sources to support U.S. public television, the comparable expenditure in Britain was $16.14, and in Japan, $11.83.

It might be postulated that because Britain has only half the population base of Japan, it must serve children less well through television, but this is not the case. The reason is that in Britain, commercial television was created largely in the image of the BBC, and, as the result of regulation by the Independent Broadcasting Authority, approximately matches the quantity and quality the BBC's out-of-school offering of children's educational and informational programs.

My book points out that in the 1985 broadcast season, a reasonably typical recent year, the BBC carried 590 hours of newly-produced out-of-school TV programs for youngsters. The comparable figure for U.S. public television was only 87.5 newly-produced hours. Thus British public television that year, with support from a population only a quarter the size of ours, nevertheless exceeded our public TV system's volume of fresh, new children's programs by a factor greater than six. The British say these programs are meant to represent a "microcosm" of the television forms that interest adults, including current affairs, drama, science and nature, crafts and hobbies, sports and news, among others. British public television also provides an extensive offering of school programming.

But more interesting is what the commercial stations are required to provide for children in return for the privilege of utilizing the publicly-owned airwaves to sell advertising. The numbers which follow are weekly averages for 1983-84, as reported by the Independent Broadcasting Authority. (For reasons that are never explained, the totals for all program categories exclude 20.5 hours each week aired on what is referred to as TV-a.m.) Three hours 31 minutes per week were broadcast in the category of "children's informative programmes," representing 3.5 percent of the weekly program offering. In addition, more than twice that quantity of "children's drama and entertainment" was offered each week--a total of 7 hours 25 minutes--representing 7.5 percent of all program hours. The commercial licensees also were required to provide 2 hours 32 minutes of "preschool education" programs each week, representing an additional 3.5 percent of all program hours. When all these categories are combined, they total 13 hours 28 minutes per week, and represent 13 percent of all schedule time. The yearly total is 700 hours.

Although these commercial licensees acquired many children's programs from outside the system during the year in question, they themselves produced an average 55 minutes per week of preschool programs, 1 hour 29 minutes of children's informative programs, and 7 hours 5 minutes of children's drama and entertainment. In all, they produced an average of 9 hours 29 minutes of out-of-school programs each week, representing a yearly total of 493 hours. By requirement of the Independent Broadcasting Authority, the children's program

offering is well distributed across the week every week of the year.

In the category of school programs for children, the British commercial TV licensees were required to provide a weekly average of 6 hours 55 minutes, representing 6.5 percent of all transmission time. Of this amount, the licensees themselves produced 1 hour 24 minutes each week on a year-round weekly average.

Counting both out-of-school and in-school children's programs, Britain's commercial licensees transmitted 1,060 hours, and these constituted 19.5 percent of their total transmission time.

When we combine the amounts of programming aired on the two British commercial channels in 1983-84 for the categories "out-of-school children's informative" and "in-school educational," we arrive at the total of older children's programs that educate or inform. This number is 10 hours 26 minutes each week, on average, or a total of 543 hours for the year. This amount constitutes 10 percent of British commercial television's total transmission time.

This is in striking contrast to the situation in the U.S., where the commercial licencees have no obligation to offer any specified number of hours of children's informational and educational television programming. And, in fact, not one of the three major U.S. commercial networks carries a regularly-scheduled children's offering during the Monday-through-Friday period of the week. The result is that Britain's children are far more abundantly provided for in the category of out-of-school informational and educational programming than are America's children.

The Australians, with a total population of scarcely more than 16 million people, also put us to shame. Like Britain, they provide for children's informational and educational needs through both public and commercial television. Their arrangement is particularly interesting, because they introduced regulation over commmercial children's TV programming in the late 1970s where previously there had been none. When the Australian Broadcasting Control Board was abolished in late 1976, to be replaced by the new Australian Broadcasting Tribunal, a new system of license renewals was instituted, based on performance reviews. The licensees asked to be allowed to self-regulate, but following a public inquiry on the question, this was denied them.

The resulting regulatory reforms obligate each station to broadcast one hour per day every Monday through Friday of "C" classified programs geared for children 6-13 years of age, and an additional half hour per day Monday through Friday to serve preschool children. "C" classification is granted on a

case by case basis by a special children's program committee set up by the Tribunal. "C" classified programs must be broadcast between 4:00 and 5:00 p.m., and may carry commercials. However, the preschool programs may not carry commercials. The regulations also specify that after the first play of any children's program, it can play in repeat no more than two additional times within a five-year period. This means that each year, each commercial station must offer, at a minimum, 87 hours of new "C" classified programs for 6-13 year olds and 87 new half hours for preschoolers, for a combined total of 130.5 hours.

As new policies and actions are forged in this important area, we can learn from other countries. It should not be thought that they surpass us in all respects, for clearly they do not. But the fact that many surpass us by a wide margin in their yearly volume of newly-produced informative and educational programs for children's at-home viewing certainly challenges us to achieve similar results in our own terms.

The only remedy for our deficiency, I believe, is is a combination of regulated reforms on the side of commercial television, and federal financing on the noncommercial side. I also believe that these solutions may never come about unless we find a way to frame them as special exceptions made for children as a unique class of persons, and as exceptions that may never be cited as precedents for other audiences or program categories. The reason children don't receive more from either commercial or public television currently is that they are a special class of persons, unempowered as a lobby, unfranchised, unemployable and therefore uniquely incapable of exacting their fair share of programs and benefits on either side. They are not a priority audience for advertisers on the commercial side, where, although they are a sixth of our population, they account for only 3 percent of the total expenditure on television advertising. The commercial industry also claims that an imposed schedule for children would violate their rights under the First Amendment. I have encountered conflicting views on this question that I am not by background and training prepared to evaluate. I believe, however, it is the obligation of Congress to provide clarification on this important matter, so that if the First Amendment is not a barrier to regulation, we can get on with it, and if it is, we can either look for ways around it, for instance by instituting a special exception for children if that is a viable approach, or else turn our energies fully to framing a solution through government financing.

The Federal Communicatons Commission, in its 1983 Report and Order on children's television, took the position that it is important to evaluate the commercial children's television offering in light of the larger environment of all program sources. However, when it invoked this principle to decide

against a specified requirement of children's week-day informational and educational programming, the FCC failed to develop adequate supporting data. As a result, its decision proceeds from only partial data and is rationalized on the basis of questionable--and in some cases that I shall point out, misleading--assumptions. Where this is so, Congress in reviewing the children's television issue is in a position to correct the record, which it is important to do, especially where the same matters of fact and assumption once again come into consideration. As one example, the FCC's position against regulated reforms alludes to the "marketplace" of video materials available to children, including videocassettes, cable television, and public television, in addition to what is offered already by the commercial stations. But it gave no data or projections to suggest even in approximate terms how much these sources, in the aggregate, would provide. Worse, the FCC neither set nor considered targets for what would constitute a reasonable or adequate provision for children. I recommend that Congress look to the performance of other countries as a reasonable way to establish performance targets for the U.S. And I recommend that the FCC's claims and assumptions about the adequacy of these sources be scrutinized in light of data and expert opinion on just what each major program source really does provide. In this, it is important that special attention be given to how well children in the poorest half of U.S. households are served by these sources. I also find misleading the FCC's reference to public television's offering for children as something in excess of 1200 hours per year, when in fact no more than 100 of those hours were newly produced that year. The FCC also failed to look at how well or how poorly those programs served different child age groups. And, in fact, in a reasonably typical recent year, the four-year age group of 6-9 year olds received no more than six minutes of new programming per weekday on a year-round average. Finally, the FCC's figure of 1,200-plus hours for children is inflated by the common practice among the public TV stations of presenting multiple daily plays of many programs. In a similar way, the commercial licensees often claim that the independent stations serve children well, but without specifying targets for quantity or quality, and without supporting their claims with data. The FCC many years ago removed the licensee reporting requirement that would allow us to assess station performance in objective terms. I strongly urge that Congress act to re-introduce this reporting in the children's area, with the requirement that programs be described by number of hours, by type and in terms of whether they are new or repeated.

My understanding of the FCC's 1983 Report and Order is that it affirms the responsibility the commercial stations have to serve children in the public interest, but leaves it to each station to decide how this is to be accomplished. I recommend that following the Australian example, Congress

should initiate hearings on the question of whether or not the commercial licensees will be given the right to self-regulate. By taking this step, Congress would not be regulating, but would be allowing a much-needed, accurate record of data and public opinion to be formed.

To legislate a dedicated appropriation to finance out-of-school educational programs would also constitute a special exception for children. A dedicated allocation of this type would help to separate the children's area, as it deserves to be, from issues of general public-television funding that should have no bearing on how well we as a nation will finance educational programming for young people. There is a need to continue and increase short-term, ad hoc government funding in this area. But to institute a long-term and stable solution will require that Congress undertake to develop a national policy, complete with rationale and administrative mechanisms. Building carefully on our own past experiences of successes and failures in the area, we could forge in affordable terms an effective mechanism by which to make more of our program offering for children serve the public interest. This is a proper federal-level undertaking, since the most favorable economic efficiencies cannot be achieved at the state or local level.

Following are some considerations that might be taken into account in developing an national policy and mechanism:

- Key program expenditures to children's real needs, with a high priority on at-home programs that deal with school-related subjects.
- Provide dedicated financing on a dependable and continuing basis.
- Seek diversity in terms of subjects, ages served, program suppliers, and program forms.
- Maximize programming to serve wide and diverse child audiences while supporting programs to serve groups with special needs.
- Allow initiatives from diverse organizations.
- Institute financing through a quasi-governmental agency, or otherwise allow for financial leveraging of the government contribution through the participation in program-funding consortia.
- Remove copyright ownership from government and from the administrative agency, to provide program suppliers with the incentive to maximize each program's distribution, and to avoid having to establish a direct government role in program

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distribution. Require that a prorated fraction of the income from program sales, reflecting the government's portion in the funding of a given program, be re-invested by the producing agency into children's informational and educational television.

- o Establish conditions under which government-funded programs might sometimes play on outlets other than through public television.

The idea of setting up a National Endowment for Children's Television has appeared from time to time in public discussions, and recently appeared in an unsuccessful bill proposed in the Senate. This and other mechanisms deserve to be reconsidered in the context of the new urgency the area presents, and with a much wider opportunity for public dialogue as a part of the policy-setting process. The longer we continue to neglect children's television, the more critical the need for remedies. Now that we are better aware of our poor international standing, and in the face of more than fifteen years of failed efforts to prompt a greater role on the commercial side, the issue takes on a new and unprecedented timeliness.

Edward L. Palmer, Ph.D.

April 30, 1989

Gina Keeney
Minority Counsel
U.S. Senate Committee on Commerce,
Science, and Transportation
Washington, D.C. 20510-6125

Dear Ms. Keeney:

This is to respond to the questions you sent on behalf of Senator Pressler following the recent hearing on educational competitiveness in children's television. I was a panelist in the hearing.

Following are the three questions and my answer to each:

1. The general assumption is that children spend too much time watching television. Is this true? Is non-educational television harmful in itself, or is it only harmful in that it takes time away from more educational pursuits?

The amount of time children spend watching television is not per se either the main issue or the sole issue with parents. Nor do I think parents feel that purely entertaining television is inherently harmful. The real issue is that so much of the time children spend watching television is wasted. The problem lies in the all-dessert diet, that lacks a balance between sweets, grains, proteins, fruits and vegetables. So the problem lies in the lack of choice. Realistically, parents can have a choice in their children's program diet only if the providers make a diversity of program types available. When I have spoken with parents about SESAME STREET, which I helped to start, many say that because their children watch it, they feel less concern about the quantity of non-educational programs that their children watch. On the question of whether television "takes time away from more educational pursuits," parents say they approve of their children watching programs that serve a valid educational purpose.

Also, the available research shows that when programs with planned educational goals are introduced, they do not increase the total amount of television children view. Specifically, during the 12-year period in which the Children's Television Workshop introduced SESAME STREET, THE ELECTRIC COMPANY reading series, and the 3-2-1 CONTACT science series, all of these programs attracted impressively large child audiences, yet their availability did not lead to an increase in the total number of hours of television watched by children each week. A reasonable assumption is that the children, with encouragement in many cases from their parents, gave up viewing other programs in order to watch these entertaining educational programs that were made especially for them.

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2. How does the United States rank in terms of the quantity and quality of children's educational television that is available?

My recently published book, Television and America's Children: A Crisis of Neglect, makes a point of comparing the U.S. children's program offering with that in Japan and Britain, and my recent testimony to the Senate subcommittee goes into the comparisons in some detail. To sum up, while quality is difficult to compare, we lag very substantially on measures of quantity. As a result, to catch up, we need not better educational programming for U.S. children, just more. Not one of the U.S. commercial TV networks carries a regular weekday program schedule for children, educational or other. Yet British commercial licensees are required to produce and air 6 hours 55 minutes each week of educational programs for school use. They also are required to create and air 3 hours 31 minutes of "children's informative programmes" each week for older children, plus 2 hours 32 minutes of "preschool education" programs each week.

In addition, on the non-commercial side, the BBC each year airs approximately 590 newly produced hours of children's public-service programming for out-of-school viewing. By contrast, in a typical recent year U.S. public television created only 87.5 hours of new children's out-of-school educational programming. The BBC's 590 hours are not all "educational," but range from purely entertaining cartoons to programs covering science and history.

Non-commercial television in Japan similarly provides a full range of children's out-of-school programs, which match the BBC's output in terms of quantity and variety. But in addition, Japanese non-commercial television produces and airs the most extensive--and most extensively used--offering of in-school educational programs of any country in the world.

Our great loss is in not taking fuller advantage of children's out-of-school television to help advance the nation's education agenda. Produced and distributed on a nationwide basis, television constitutes substantially the most cost-efficient means available by which to improve our children's education and our nation's competitive educational standing. Our deficiencey relative to other countries stems partly from our reluctance to regulate on the commercial side, and partly from our failure to provide a dedicated allocation for children's out-of-school educational programs on the non-commercial side.

Finally, it is important to note that our deficiency in educationally sound children's fare is not made up by throwing cable television and videocassettes into the equation. The programs produced for home consumption via cable and cassette are neither intended nor capable of responding to our most urgent national educational deficiencies. Programs to meet these deficiencies must be geared expressly to outstanding

priorities, must employ educationally sound teaching methods, and must be accountable to bring about measured educational results. Another important consideration is that children whose educational needs are the greatest--those from low-income circumstances--do not have reasonable access to either cable or cassette programming.

3. Isn't parental encouragement the primary factor in getting children to watch educational television, just as it is the primary factor in getting children to do their homework? Or is television an independent force?

Although we know from repeated successes in the U.S. and elsewhere that children of all backgrounds will watch attractively produced educational programs, I am not aware of any study that tells us to what extent parental encouragement is a factor in this. It is relatively easy to conduct a study to show how many children watch a given program, using audience measurement methods set up to guage viewership for commercial programs. It is both less easy and more costly to find out why children who watch a given program do so. One reason I would not equate television to homework is that the success of television as a teacher is not dependent on the child's ability to read. In this respect, television is known to be especially helpful in the case of children who are experiencing difficulty in reading. It allows them to keep up in their school subjects where otherwise they may lag desperately far behind their better-reading schoolmates. I would say inherent appeal in educational programming is more important than parental encouragement, and to this extent, yes, television is an independent force.

This concludes my answer. Thank you for your interest, and for any support you feel you can bring to this long-neglected opportunity to enlist television as the educational resource for children that other countries find it to be.

Yours sincerely,

Edward L. Palmer

Senator INOUYE. I would like to call a recess, a short one. We have another vote to provide 30 cents an hour for the poor folks of America.

I will be back in ten minutes.

[Brief recess.]

The CHAIRMAN. The committee will come back to order momentarily. The chairman, Senator Inouye, is attending the vote and will be right back.

All three of you enthuse me. It is very difficult for me to get enthused around this town and we have not been doing too much. It is the most delinquent of governments I have ever been affiliated with, and I have been affiliated for 40 years with one or the other levels of government.

Right to the point, Mr. Burton, on your enthusiasm and your contention—and I agree with it, but I just want you to elaborate on Reading Rainbow—it really enthuses and gets children interested in reading.

Now, that is the big no-no on television. I know a tremendous group of very sophisticated, highly educated friends that will not allow their children to watch TV because they say TV teaches

them bad habits, they will not read. Until this day, their children are not allowed to do it unless they sneak around.

And so for you to refute that premise is most important, your particular program, because I am convinced that it does.

On the other hand, I know another group of people that never got out of high school. My predecessor, Senator Burns, was a Congressman, Senator, Supreme Court Justice, Secretary of State, Governor. He was a voracious reader, everything he could get his hands on.

As a lawyer, I have represented successful businessmen who never had the chance to attend a college, but are voracious readers, everything they can get their hands on.

Tell us a little bit more. How do you measure the success of Reading Rainbow?

Mr. BURTON. How do we measure the success? I guess the largest measuring stick is the response of children themselves, and we have heard from teachers, from the educators themselves, from librarians, from bookstore owners.

These kids—see, I think one of the important things about Reading Rainbow is it is a television show that is very realistic about what it is. And we say to the kids unabashedly: We are a TV show and we can only do so much here on TV; now, if we have turned you on at all, it is our wish that you go out and get a book and have that personal experience with your own imagination, because the images that you can come up with in your mind to associate with the words and the story are far more vivid and personal than anything we can provide for you.

And we do this during the summertime primarily, a time when normally the last thing a kid wants to do between May and September is pick up a book. So knowing that, this show was created by a teacher, an ex-educator, a woman who said: We have what we refer to in the profession as a summer loss phenomenon. When a child leaves school, during that summer break their reading and comprehension skills invariably plummet.

And so by having a half an hour of television on every day during the summer months to bring them back to literature, to the written word, an actual television program that promotes reading—that is where our kids are during the summer, they are sitting in front of the tube. And if we can get their attention there and steer them in this other direction—pick up a book, you can travel anywhere in the universe in your mind.

The CHAIRMAN. I am ready to give you the $10 million. It is a good thing I am not king around here.

I have seen it, you have got that program in for senior citizens. I have had a lot of functional adult illiterate adults. Many a small child in the Piedmont area of South Carolina was put in behind a loom in a textile plant at 10, 11, and 12 years of age and never got any kind of education.

And through adult education, I have gone and presided at their graduations. For the first time they could read the newspaper, 75, 76 years of age, tears in their eyes because they have received a little diploma stating that they could read and they could finally subscribe to the newspaper.

I have had prisoners. I initiated a tremendous education program around behind the prison wall. The prisoners were illiterate—they had nothing to lose and they could not read and so they were stuck down in the ghetto, into mischief and into crime.

And so we have those kind of programs to teach reading. It is the most important habit we can possibly teach.

I remember when we only had 200 members of the Young Presidents Organization. Now we have gotten so rich in America, they have got 4,000 members I guess now.

But it is those who, 40 years of age and under, make a million a year or, if in insurance, you write $10 million worth of policies. And we will go to the college campuses. They have taken me along as a politician. And after we made our little pitches, you could see the students on the front row ready to raise their hand, you know: What course should I take and make my million?

You know, they expect Internal Revenue 101 or Economics 202 or some nonsense. And to a man every one of those young millionaires would say English. That would throw them back, but then they would explain, exactly what you are talking about.

You could travel anywhere, you could learn, you could understand, you could keep up, you could live.

And it is very, very important that we get this started. And you watch it, you will find a lot of adult violators cheating and watching your show. You watch it. It means something to everybody of every age.

Dr. Palmer, did you learn in the research on this wonderful book you have written about the British whether they have a classification system at all? It was mentioned earlier by our distinguished chairman.

Dr. PALMER. Yes, they have a children's board also that serves the Independent Broadcasting Authority. But in Britain the commercial stations do not own the facilities and they do not plan the schedule.

The Independent Broadcasting Authority, a quasi-governmental agency set up by Parliament, manages the system, says what programs, on what general subjects, should be in each slot, and then requires that the commercial advertising organizations produce the programs to fill the schedule that they specify.

The Independent Broadcasting Authority reserves the right, or did in its initial charter—that may have changed—to look at programs before they go on the air and to look at the categories, to make sure that they meet the specifications.

Australia basically followed that model in setting up its C classification for children, which it did in the late seventies. And it established a board which reviews programs. The board says, this program qualifies for C classification; then the station, the commercial station, can meet its C classification obligation by playing that program.

Otherwise it would have to—I do not know how well that works. I am not necessarily advocating that. I am only describing it.

I am saying we cannot necessarily import solutions from abroad. We have to find solutions in our terms that fit our system.

A solution we could import from the Japanese—we gave it to them—was a dedicated tax, but I do not think we are going to have

a dedicated tax to support television. They have that because we required it, and they have the best funded public television system in the world, because MacArthur required it.

The CHAIRMAN. It could be that Senator Inouye and his committee would want to consult with you to guide us with respect to making a peremptory study.

Are you available to help us?

Dr. PALMER. Oh, yes, by all means.

The CHAIRMAN. Because you see President Bush and we all believe in voluntarism around here.

We do not want to pay anybody anything. We are absolutely opposed to increasing our own pay.

Mr. Britt, we appreciate it very, very much. You are the leader of them all with Big Bird, Sesame Street. That has really opened the eyes of all of us interested in America competing, and there is no question about it.

Let me yield to our chairman then. Thank you, Mr. Chairman.

Senator INOUYE. Thank you very much.

Mr. Burton, 20 years ago I was privileged to serve as chairman of the District of Columbia Committee, and it was my responsibility to approve or disapprove appropriations for the use of the administration of this city.

At that time I recall receiving a set of horrible statistics, that in the inner city of this capital of the world, the capital of the United States, the inner city where the poor people live, each household had an average of a book and a half, not counting the telephone book. That is all they had, one and a half books per household.

And then I thought about my son, who was a little child at that time, four years old, and in his library there were over 400 books. And I thought of the terrible, terrible injustice and neglect.

I just hope that the program that you are hosting has helped to increase the number of books in the District of Columbia to at least three per household.

And I want to commend you for what you are doing and for your passion, as you put it. What we need is a few more passionate people in this country to make certain that the message gets across here before it is too late. And I want to thank you for what you are doing.

Mr. BURTON. Thank you, Senator. We are in danger, I feel, in this country and in our culture of losing touch with the written word, and that is a tragedy and a shame unparalleled, I think, in the history of our civilization.

It is impossible to survive and compete in our culture without the facility of knowing how to read. And you cannot operate a computer, you cannot figure out a simple manual, without knowing how to read.

And Senator Hollings, you spoke of a large adult population that may tune in to Reading Rainbow and benefit therefrom. I agree completely, and illiterate adults are an invisible minority. They have developed for so many years the facility to hide this deficiency, and they feel separate from, they feel left out.

They feel that there is a big club that they are not a part of, and the emotion that you spoke of when these people finally get that diploma and can open up a newspaper and read a paragraph is real

and powerful, because they have felt left out for so long and now they can join that club, they can join that family.

I would like to ask, Senators, that the prepared written testimony be entered as part of the record. A lot of people worked very long and hard on that prepared statement, and if it could be entered as part of the record I would be most appreciative.

Senator INOUYE. I can assure you that all your statements will be entered into the record in total if you summarized them, and I will also ask all of the witnesses if they would be willing to receive questions from the committee for your consideration and response.

Dr. Palmer, I do not know if I heard correctly, but you made an astonishing statement, that children did not constitute a market. Did I hear correctly?

Dr. PALMER. Well, that is quite true, yes. I can elaborate. Was there more to the question?

Senator INOUYE. Yes, because I was under the impression that it was a big market, Kellogg's and Post Toasties and Grape-Nuts. They seem to be spending a lot of money—Nintendo.

The CHAIRMAN. Yes, I just had to buy one of those things.

They are a market.

Senator INOUYE. Is that not a huge market?

Dr. PALMER. I can put it in fairly precise terms. These 2- to 13-year-olds we are talking about, the 42 million children that we hear about, are about a sixth of our total national population. They account for 3 percent of the advertising on commercial television.

They are a much less attractive audience to try to gather in front of the television set for marketing purposes, because they do not care how fast a car accelerates zero to 60, they do not have heartburn, and they simply do not have very much money to spend.

So no, they are not a very big market.

Senator INOUYE. Saturday morning they take over the screen.

Dr. PALMER. And just before Christmas, also.

Senator INOUYE. You mean it is only 3 percent?

Dr. PALMER. Three percent, sir, the volume.

Senator INOUYE. Mr. Britt, is that correct?

Dr. PALMER. Three percent is a lot, because we are talking about a $25 billion a year industry.

Mr. BRITT. Yes, the 3 percent is in terms of volume of advertising dollars. It should not be confused with the proportion of minutes of advertising time. The advertising time that is devoted to children is larger than 3 percent, but it is offered at lower rates than is nighttime advertising.

So that you do see, as we all do, this endless stream of commercials on children's television, particularly on Saturday morning, particularly, as Ed says, before Christmas, and now increasingly every afternoon on independent channels around the country.

But the fact is that the dollars that are being paid for that advertising are much smaller than those paid for nighttime advertising.

Senator INOUYE. If Sesame Street decided to go commercial and you went out for advertisers, would you be able to get a good time slot and get advertisers?

Mr. BRITT. Well, Mr. Chairman, in the 20 years that we have been at Sesame Street, to my knowledge commercial broadcasters

have not expressed very much interest in wanting our show on a normal basis in terms of advertising. The very first year that we were on the air, we got a number of commercial stations to be willing to run it, but not for the long run.

They certainly would not give us twice a day scheduling, because children's programming is the least profitable programming that they have. And in most public television stations we get at least two hours a day in the time slot that we want.

I do not think that you could get a commercial network or a commercial station to run Sesame Street at 9 a.m. They are doing other things. You might be able to get them once in a while to run it at 4 o'clock in the afternoon, but I do not believe that Sesame Street would find a very happy home on commercial television, despite its popularity.

The CHAIRMAN. That is remarkable.

Senator INOUYE. Dr. Palmer, we have spoken about comparative statistics, Japan, Britain, the United States. Japanese television for the most part is government-owned or controlled, is it not?

Dr. PALMER. Well, they have, sir, four commercial stations nationwide and a fifth commercial station in the Tokyo area, in addition to two nationwide channels on public television, the NHK.

Senator INOUYE. What about the commercial ones? Do they have government interests in it?

Dr. PALMER. Do they have government interest?

Senator INOUYE. Yes.

Dr. PALMER. They are mostly owned by—they were initiated by what were previously just newspaper groups, who expanded.

Senator INOUYE. Is it comparable to NBC, ABC, and CBS?

Dr. PALMER. Yes, yes, they are very commercial, advertising-supported television.

The CHAIRMAN. But the newspapers own the TV stations?

Dr. PALMER. Yes.

The CHAIRMAN. Oh, boy.

Senator INOUYE. Now, BBC is government-owned, is it not?

Dr. PALMER. BBC is not exactly government-owned. In fact, the BBC is supported by a yearly tax on everybody's television set.

Senator INOUYE. That is government-imposed.

Dr. PALMER. Oh, yes, government-imposed. But I guess I am quibbling with the word "government-owned" because the public directly sends its money to support the BBC and to provide, therefore, the support for the programming that the BBC puts on the air.

It is a quasi-governmental agency that manages it as a publicly supported public service activity.

Senator INOUYE. This may be an unfair request or question. Would it be possible for the witnesses who have been here today to submit a list very privately of 20 names of leading scholars and experts in the United States that could help this committee?

Mr. BRITT. Surely.

Dr. PALMER. I would be very pleased to do that.

Senator INOUYE. I am going to ask that of all the witnesses. Not just television people, but psychologists.

Dr. PALMER. Senator, can I ask you a question about that? Would you mean that that would be pertaining to the direction of develop-

ing a non-commercial offering only, or also names of people who could help with reviewing the commercial side?

Senator INOUYE. The whole spectrum.

Dr. PALMER. Thank you.

Senator INOUYE. Because I do not think we can just concern ourselves with public television. We should be looking at commercial television also. That is where the action is, from what I gather.

Mr. BRITT. Yes, and cable as well, sir.

Senator INOUYE. And cable also. And what I would like to have is a panel of, say, 20 dedicated, committed men and women who can serve as an advisory panel for this committee. After all, as the chairman pointed out, we may be committed and dedicated, but we are high class politicians.

We know the value of television, however. All you have to do is look at our campaign spending reports and you will see how much we spend on television. In fact, we spend more than we spend on children's television.

The CHAIRMAN. And I am interested about that children's rate that you and I have not been getting.

I have been thinking, they have not given us that kind of rate.

Senator INOUYE. Yes. Well, gentlemen, I thank you very much. It has been a long day, but it has been extremely helpful.

And I will keep the record open for 30 days. If you have any suggestions or any criticisms on the bill that we will be introducing, we welcome them.

Thank you all very much.

[Whereupon, at 12:25 p.m., the subcommittee was adjourned.]

STATE OF CONNECTICUT,
DEPARTMENT OF EDUCATION,
March 22, 1989.

Senator E. F. HOLLINGS,
Senate Office Building,
Washington, DC.

DEAR SENATOR HOLLINGS: Enclosed is a brief report concerning the use of educational technology, including television, in Connecticut. I have tried to highlight some of the activities concerning the use of technology in Connecticut schools, the involvement of the private sector in promoting the use of educational technology, a brief description of a small incentive grant program established by the Connecticut General Assembly and some areas where I believe Federal assistance is necessary.

With the knowledge that you are in need of information concerning the use of television and other educational technology as soon as possible, I am sending this report over my signature. It is anticipated that Connecticut Commissioner of Education, Gerald N. Tirozzi, will be communicating with your office concerning the use of educational technology in our school in the near future.

If I can be of any further assistance, please feel free to contact me.

Sincerely,

ROBERT G. HALE,
Coordinator, Learning Resources and Technology Unit.

Enclosure.

Educational Technology in Connecticut Schools

A Brief Report For Senator E. F. Hollings

The use of television programs as an integral part of the day to day classroom activities is considered to be a common and successful practice in Connecticut schools as well as schools all across our country. For years, the Connecticut State Board of Education has operated the Instructional Television Service for Connecticut schools. The State Board of Education and the Board of Governors for Higher Education have actively worked toward the more effective use of educational technology, including television, to enhance instruction for learners of all ages.

As an indication of the importance of television in education, the Connecticut General Assembly, in 1985, enacted legislation establishing the Telecommunications Incentive Grant Program. The basic goal of the program is to assist local and regional school districts and regional educational service centers in developing and expanding their use of telecommunications, including instructional television. During the three years of operation of this modest program over 25 grants have been awarded. Eighty percent, or 20 projects, used television as the primary instructional tool. As a result of the incentive grant program, Connecticut schools have received over 1.5 million dollars in assistance from the private sector to increase the effective use of educational technology in our schools.

The need to provide all students with opportunities for broad based instructional opportunities has resulted in an exponential increase use of television for distance education. Currently more than 23% of Connecticut school districts are involved in projects incorporating the use of television for real time distance education, primarily sharing instruction among participating schools.

Clearly, the projects funded under the Telecommunications Incentive Grant are making a difference in the opportunities for instruction for students and professional development activities for teachers. Implementation of technology based instructional programs requires time: time for school districts to become familiar with the technology; time to address critical issues, such as alignment of school schedules; time to train the teachers to make effective use of the technology; time to raise the awareness of community members about the effective use of technology and time to establish demonstration sites to showcase the application of technology. The telecommunication projects made possible as a result of the incentive grant program also serve as demonstration sites, a valuable resource for Connecticut educators.

Concurrently, the use of recorded instructional television programs in the classroom, school library media center and in the home is increasing. There is a renewed awareness of the value of quality television programs in the teaching learning process.

The State Board of Education is cooperating with the Southern New England Telephone Company in the application of telecommunications technology to education. A major portion of the project involves the use of television. The television project consists of two parts, the expansion of a fiber optic network to include four suburban and one inner city high school and the interconnection of a suburban and inner city using compressed video technology. This project will assist in determining:

the advantages and disadvantages of the two technologies

the applications where distance education can contribute equity of learning opportunities

the applications where distance education can contribute to excellence in education

the cost effectiveness of the technology.

In addition to the distance learning component involving television, the project is also demonstrating the application voice messaging and remote database access to education.

Achievement of the State Board of Education's vision for education in Connecticut can be accelerated by the appropriate use of educational technology. Research indicates that the effective application of appropriate educational technology will make instruction more:

accessible
immediate
productive
relevant
cost effective and efficient
individual
powerful
responsive to special and individual needs

Many states, including Connecticut, have started modest support for the development of technology based programs, including the expanded use of television, to improve access to quality instructional opportunities for students of all ages. The time is here for the Federal government to make a commitment to the development of technology based programs for education.

The Federal commitment should have as a minimum, the following goals:

1. Provide access to the widest possible range of constructional materials and methods for all students in the United States, and

2. Ensure that teachers in our schools have access to the materials, programs, equipment and training necessary to provide instruction for the "Information Age."

Specifically, the Fedral funds should provide incentives for state and local education agencies to:

Support professional development activities for the instructional staff of local and regional school districts in the effective and efficient use of educational technology to: enhance instruction, improve access to instruction and/or improve the curriculum development process through an instructional design approach.

Support the development of quality instructional television programs to expand the educational opportunities for learners of all ages.

Support the acquisition of equipment to implement technology based instructional programs in order that students in all areas of the country, rural, suburban and urban may take advantage of expanded learning opportunities.

Support the expansion of instructional opportunities to non-traditional locations.

University of Lowell College of Education

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April 13, 1989

Senator Daniel Inouye
Senate Communications Subcommittee
Senate Office Buildings
Washington, D.C.

Dear Senator Inouye,

As a academic in the field of television and literacy, I have been following the proceedings of the Senate Communications Subcommittee closely.

I strongly support your notion that something must be done regarding the nature of television and literacy in the U.S. I am sending a copy of a study done on over 2 million children in the U.S. Please carefully note the astonishing graphs. What these graphs clearly show is that while television has the potential of being a constructive force for young children, it has clear and undifferentiated impact on older students at the high school level. What this means is that while television could be encouraging higher level thinking, it is not due to the lower level of programming now available.

In contrast to what a number of other researchers are suggesting, I believe a strong programming effort needs to be addressed for older children. You are correct in stating that there is a crisis in literacy today. Yet, unfortunately, the potential use of television to enhance literacy among these people, has not be adequately tapped. I am sending a short proposal that suggests creating an Adult "Sesame Street" type program for those who have neither the resources nor the inclination to make us of adult education programs.

It is extremely critical to provide better programming to our nation's children at all age levels.

Sincerely yours,

Susan B. Neuman, Ed.D.
Associate Professor

M. Virginia Biggy, Ed.D.
Professor of Education and Dean
Upham Hall, West Campus

TELEVISION AND LITERACY: A PROPOSAL

Susan B. Neuman

University of Lowell

The Problem

- There are as many as 26 million Americans who cannot read or write.

- There are an additional 72 million who lack the basic competencies to function proficiently, who are not able to fill out employment applications or follow written job directions.

- Forty-seven percent of all black 17 year olds are functionally illiterate, a figure that will rise substantially by 1990.

- Fifty-six percent of all Hispanic Americans are functionally illiterate.

- Sixty percent of all inmates in correctional institutions are illiterate.

- Only 2-4 percent of American adults requiring literacy services are reached by the present public and private programs.

The Opportunity

Since the 1960's, a wide variety of programs sponsored by federal, state, and local organizations have been developed to combat adult illiteracy. Tutoring services, the Right to Read program, adult basic education and others have focused chiefly on reading, writing and communications skills to foster conventional literacy. Another set of programs with more functional goals in mind, have been competency-based, designed to teach skills and competencies related to the personnel and job-related needs of the learner. Programs sponsored by the military, labor unions, and community-based organizations have attempted to link conventional skills with skills that stress the use of problem-solving abilities in relation to practical applications.

However different in focus, both types of programs require individuals to recognize certain deficiencies in job or academic skills and search for programs that will provide additional training to achieve their goals. Yet Hunter and Harman (1980) report, in their comprehensive review of adult literacy, that only 2-4% of the target population ever take advantage of these programs. An enormous gap remains between the number of people

who seek help and those who might benefit from it.

Television provides a unique opportunity to help those adults who lack skills in reading. Less educated and poorer citizens spend considerably more time viewing television than their better educated and well-to-do counterparts. Television and radio programming are particularly critical to this population. Without the option of reading print materials, millions of illiterates rely on the TV medium to provide information and entertainment. Unlike other institutional learning systems, television has the advantage of low cost for the learner, and immediacy, of "reaching people where they are", embedding literacy into everyday life. The challenge, however, is how to use the medium as an optimal learning delivery system for adult illiterates.

A large number of independent efforts are currently underway. Project P.L.U.S., combined with ABC television, has provided important outreach efforts to encourage adult illiterates to seek outside literacy traing services. WNED in Buffalo is involved in a number of projects with adults. American Ticket, a program designed to teach basic skills and English as a second language, is currently under development. Sandy Welch in Kentucky has developed a GED program which uses a soap opera format to teach functional reading skills. Other programs that emphasize outreach projects to the community are also being designed and implemented.

However, these programs tend to serve small audiences with specifically targeted deficits. There has been no national television effort to significantly combat illiteracy among adults. The challenge, then, is to escape established programming concepts, to use our research and creativity in order to provide favorable learning conditions for these adults.

A Proposal

This proposal seeks approximately $10,000 to set up a working conference, bringing together a consortium of specialists to explore the creation of a nationally broadcast television program designed to teach reading to adults. There is, of course, a strong precedent behind this proposal. Sesame Street began in such a way by bringing together educational advisors, researchers and television producers as equal partners in an experiment to teach readiness skills to preschoolers. Educational goals and the principles of learning were joined with the technical capabilities of television.

Specifically, we propose the following strategy:

1. A core group of specialists from fields of adult literacy, educational technology and psychology, and television production will meet over three working sessions. This committee, involving no more than eight members, will address key

implementation issues related to program development. These topics will include such issues as:

- The needs of the adult learner
- Strengths and limitations of television as a teaching medium for the adult learner.
- Potential target populations for a television program
- Specific literacy skills to be emphasized
- Strategies for teaching these skills that are suited to the television medium
- Examples of existing prototypes and exemplary media materials addressing these skills
- Strengths and limitations of television as a teaching medium for the adult learner
- Supplementary technologies that might complement television as a medium for delivering literacy education

A set of invited working papers addressing each of these major issues will be written by the group members and coordinated by the Project Director.

2. These papers will be distributed to an advisory group for feedback. This advisory group will involve a larger group of experts from other fields, including potential funding sources, advertisers, and technology resources. Member will offer fresh perspectives, suggest applications, and additional funding persepctives. These comments will be incorporated in a final report which will form the basis for future design and development of a national literacy media effort.

A List of Potential Participants

Below is a brief list of potential members of the advisory group, many of whom have already been contacted and expressed interest in the project.

Adult literacy

Jeanne Chall, Harvard University
Robert Coles, Harvard University
Thomas Sticht, Applied Behavioral and Cognitive Science Laboratories
Richard Anderson, Center for the Study of Reading, University of Illinois

Educational Technology and Psychology

Gerald Lesser, Harvard University
Keith Mielke, Children's Television Workshop
David Olson, Ontario Institute for Studies in Education

Television Production

Margot Woodwell, WQED, Pittsburgh

Samuel Gibbons, Bank Street College of Education
Norman Lear, Independent television producer

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May 10, 1989

The Honorable Daniel K. Inouye, Chairman
Subcommittee on Communications
Committee on Commerce, Science and Transportation
United States Senate
Washington, D.C. 20510

RE: Senate Bill 797

Dear Mr. Chairman:

I am writing you this letter on behalf of myself and my associates who wish to commend your introduction and support of S797. We are actively working to develop a children's radio broadcast network with the same goals as those presently embraced by S797.

Although much attention and funding has been directed to children's television, radio as a medium for children has largely been ignored. We believe this is because many adults and many broadcasters have assumed that only television, with its video as well as audio signals, can maintain a child's attention. Children, however, especially during the pre-school years, are extremely responsive to audio programming. In fact, the lack of visual images can actually serve to stimulate a child's imagination. It is this very quality that has dubbed radio "the theatre of the mind." In comparison, television is a passive medium for children, with the child merely absorbing sound and images.

We believe radio has particular efficiencies for providing broadcast material to children that is unavailable from television. As children's material do not require video or stereo production, radio can provide high quality programming at reasonable cost. In addition, unlike television, radio is portable and thus can provide information and entertainment for children in the car, on the beach, and in the park, as well as in the home and at school.

Further, we believe that specifically AM radio provides a unique opportunity for children's broadcasting. With the introduction and development of FM radio, listeners have altered their listening habits to the clearer sound provided by FM, thus abandoning many AM radio stations around the country. AM radio stations are starved for new programming alternatives to compete in this new environment. Accordingly, AM radio stations nationwide

would be interested in airing a quality children's format. For these reasons, AM radio is an ideal vehicle for this project.

Obviously, children's radio is not new. During the "golden age" of radio, many millions of children listened to the radio on a regular basis. More recently, National Public Radio has produced and continues to produce a handful of programs. On the commercial side, there are a handful of major market stations that run a half hour or one hour segments of children's programming primarily early Saturday morning. On a full time basis, only one commercial radio station, provided children's programming. However, that station has recently ceased broadcasting children's programming. On a network basis, there was an attempt to develop a commercial children's radio network. However the network failed due to the lack of planning and inadequate financial capitalization.

It is our belief, that a children's radio network can be developed that will not only provide a valuable educational resource for children around the country, but that also can evolve into a self sustaining viable commercial entity. To this end, we have assembled experts in numerous disciplines including broadcasting management, programming, marketing and sales, research, as well as major artists and a clinical psychologist specializing in children, all of whom are devoted to the development of this project. However, since there does not exist a successful financial model for developing children's radio, and given the state of AM radio, it has been very difficult to raise the necessary funding to further develop this concept.

Accordingly, I would respectfully recommend your Committee consider dedicating a portion of the funds provided under S797 for the development of a nationwide commercial children's radio network. Specifically, I would suggest 20% of the funds, or $2 million to be set aside for this purpose.

If you or the Committee have any further questions or would like to explore this matter further, please contact me and I can provide any and all information that you may require.

I appreciate your assistance in this matter.

Sincerely yours,

Matthew L. Leibowitz

MLL/mgr

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CHAPEL HILL, NORTH CAROLINA 27515-3808

WILLIAM FRIDAY
PRESIDENT

919 962-8150

April 4, 1989

Senator Ernest F. Hollings
Russell Building
Washington, DC 20510-4002

Dear Senator Hollings:

Henry Cauthen of South Carolina ETV has asked if it might be possible for me to make a statement at the hearing you plan to conduct on April 12. I regret my schedule will not allow me to participate on that date, as much as I should like to do so.

I do have some serious concerns that I am sure will be addressed by those making comments at your hearing. The next few years certainly will afford the educational community at the elementary, secondary and post secondary levels a unique opportunity to use a wide variety of delivery systems as it approaches the use of "television" to effect learning. Broadcasting will remain an important option. There is much more to the opportunity. We must have the resources in both dollars and skilled technologists, curriculum specialists and creative types with the right tools available to them to produce the programs, cassettes, video discs, computer programs...what ever the learning product to be distributed.

Our young learners are and will be more demanding in terms of video presentations and what they will watch, tolerate and learn from. The technologies will be there for us to employ. We must have the skill, the sophistication and desire to utilize those technologies and resources as we have not done in the past.

Further, it is not too late to reverse a trend that must be reversed. You are all too aware of the crises we face with illiteracy in America, illiteracy fed by higher school dropout rates than we have experienced in years. This phenomenon is fueled by poverty and results in increased poverty.

A third component is an aging population subject to the influences of a society impacted by poverty, illiteracy and health/housing/care taking. Television is a communication language to which the illiterate not only respond but rely on. It is the source of diversion for the poor, the homebound, the elderly.

We must apply the right resources, human and other...announce new priorities...and commit ourselves to using the technologies that do indeed reach those now neglected by our society. Having visited food kitchens and adult learning classes, it is difficult indeed to understand why, in our affluent society, there is so much hunger, illiteracy, homelessness, despair and loss of self-respect among these fellow Americans. This is a shameful condition that must be corrected if we intend to strengthen the work force for the turn of the century.

I hope and trust that your efforts will receive the aggressive support from your colleagues that they richly merit.

Cordially,

Bill

William Friday

NATIONAL ASSOCIATION OF
PUBLIC·TELEVISION·STATIONS
SUITE 200 1350 CONNECTICUT AVENUE, NW WASHINGTON, DC 20036 (202) 887-1700

May 11, 1989

The Honorable Daniel Inouye
Chairman
Subcommittee on Communications
Committee on Commerce
722 Hart Senate Office Building
Washington, D.C. 20510

Dear Chairman Inouye:

Thank you for the opportunity to provide comments on your new legislation, S. 797, which would establish a National Endowment for Children's Educational Television. We heartily endorse the goals of this legislation, and we were pleased that we could provide LeVar Burton as a witness for your hearing on the issue of children's educational television in April.

In the written testimony that we submitted for that hearing, we restated public television's strong commitment to America's children. We are the only consistent provider of free, high quality educational programming for children to watch at home and at school. We are pleased that this commitment has been recognized in your legislation. We are equally pleased that you have also recognized the difficulty that stations and producers face in raising money to produce children's educational television programming.

Your committee's strong support of funding for public broadcasting has helped us achieve some of our goals for children's programming. Your continued support for funds for the Corporation for Public Broadcasting (CPB) and the Public Telecommunications Facilities Program (PTFP) through the authorization process last year has allowed us to continue to serve our audiences.

The endowment for children's programming that your new legislation would create would be very helpful in providing leadership in support of children's programming and in providing a supplement to existing funds the federal government currently provides to children's public television programming. The funds would assist program producers in securing the difficult but necessary first commitment of dollars that could leverage other funds from public television stations, other federal agencies, CPB, foundations, businesses, and other private funders.

Our comments on various aspects of the bill at this time are included below:

1. The Endowment's funds must be viewed as a supplement to and not a replacement for other federal funds that currently support

educational television programs for children on public television. The Department of Education and the National Science Foundation now help support some of public television's best offerings for children. The creation of this Endowment should not preclude them or other public and private funders such as CPB from continuing to fund projects that meet their agencies' goals.

2. The Endowment must focus on the long range goals of the programs it funds. Although providing start-up costs for major new children's programs and series is a critical part of the Endowment's mission, it should not be precluded from continuing to provide funds for programs that may need smaller amounts of assistance after two years to remain on public television if they are successful and need moderate amounts of money to continue.

3. Creation of the Endowment should be viewed as a long range commitment that continues to receive federal and private support. While the $10 million included in S. 797 is a generous offer of assistance, provisions should be made to reauthorize or replenish the Endowment in future years. Additionally, provisions should be made for replenishment of the fund by commercial users of the program who qualify under Subpart B(b)(2) of the bill.

4. Administration of the program funds in the Endowment should be free from political interference. Insulating program decisions from undue political influence has long been a concern of public broadcasters and may need to be more fully addressed in the bill. Although some federal agencies presently make grants for the production of public television programs, none exists solely for this purpose and new provisions in S. 797 may be needed to avoid any opportunity for political pressure.

We would be pleased to provide any information that the Subcommittee deems necessary to move this legislation forward. We appreciate the opportunity to provide these views and look forward to working with you on this and other issues in public broadcasting.

Sincerely,

David J. Brugger
President

Children's Television Workshop

One Lincoln Plaza / New York, N.Y. 10023 / 212 595-3456

DAVID V. B. BRITT
PRESIDENT
CHIEF OPERATING OFFICER

May 22, 1989

The Honorable Daniel K. Inouye
Chairman, Subcommittee on Communications
Senate Committee on Commerce
Room 227
Hart Senate Office Building
Washington, D.C. 20510

Dear Mr. Chairman:

The purpose of this letter is, as requested, to write down some of the specific observations we have about S797. Let me say first how appreciative we are of your strong leadership to increase support for quality educational children's television. This bill reflects the understanding and foresight of you and your cosponsors about the need to use television to help improve the educational achievement level of our children.

Let me now focus on a few concerns:

First, the bill attempts to provide a non-public television safety valve with the statement that, "The Secretary may waive the requirements of paragraph (1) of this subsection if the Secretary finds that neither public television licensees and permittees nor noncommercial television licensees and permittees will have an opportunity to air such programming in the first two years after its production" (my emphasis).

I do appreciate that in granting the Secretary this particular discretion, the bill attempts to build into the proposed legislation a failsafe against overloading public television's broadcasting schedule of children's programming. However, technically speaking, public television probably could broadcast any amount of new children's programming, if it were willing and able to fill its entire schedule with such programs.

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As a practical matter, public broadcasting needs to serve other audiences as well as children, so the practical "opportunity" to broadcast children's educational programs is narrower than it seems. To avoid making the Secretary's discretion too limited, I suggest basing it on the possibility that because of the shortage of appropriate slots on the public broadcasting schedule, new educational programming for children is unlikely to be widely broadcast on public television for the first two years after its production.

I also recommend that a place be found in the legislation to explicitly authorize three other crucial tasks for the Endowment. As I indicated previously, these tasks are essential to insuring that the new Endowment is as effective as possible.

Briefly, they are:

-- to build a national research and information base on the effects of children's educational television, and identify emerging needs and opportunities, such as in day care and after-school programs;

-- to advocate the use of educational television to other government agencies, public television, private foundations, states, corporations, and commercial communications entities.

-- and most important, to report to Congress regularly on the state of educational television for children, and recommend changes needed to speed progress.

Of all our concerns, the last is the most crucial. The Endowment should survey all television--network, public, and cable--and report to Congress periodically on the state of children's educational programming wherever it appears--or does not appear. Essentially, the Endowment should play the role of a watchdog, keeping a vigilant eye on what television is or is not doing on behalf of children's education. As you stated so eloquently, the problems of quality children's programming are problems for all of television, not just public television.

Your staff and I have discussed at some length the need for independence and stature for the Endowment, consistent with its placement in the Department of Commerce. In that connection it might be helpful to add the words "nationally recognized"

before the word "expertise" on line 13 of page 5. In addition both Sec. 394(b) and Sec. 394(e)4 involve the Advisory Council in the making of grants. It would be useful if report language could make clear the Council is not expected to approve and should not be involved in approving specific grant applications.

I have one final concern about the bill's language. At present, the bill talks principally about public television funding, leaving the impression that it intends to create a special children's educational fund for public television. My fear is that the Endowment will be viewed in just that way, taking public television "off the hook" in terms of responsibility for funding.

I feel that it is important to state, preferably in the bill, that the purpose of this legislation is neither to simply create a new CPB fund, nor to supplant the CPB or any other federal agencies' support of educational children's television. Indeed, all current funders need to continue and increase their support. The Endowment's own grants should only add to the present level of funding, and draw other underwriters' attention to children's educational television as a serious concern.

I know you understand how supportive we are of the Subcommittee's intent, and how grateful we are for your concern about children. My concerns reflect our long experience in these vineyards, and how hard it is to sustain a positive focus or support for children's educational television.

Let me know if there is anything we can do to help. In particular, we would be pleased to work with the Subcommittee staff in developing specific language to carry out the suggestions we have made.

Regards,

David Britt

David V.B. Britt
President-Chief Operating Officer

DVBB:mdm